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A

NEW DICTIONARY

OF

NATURAL HISTORY;

OR,

COMPLEAT UNIVERSAL DISPLAY

OF

ANIMATED NATURE.

WITH

ACCURATE REPRESENTATIONS

OF THE

MOST CURIOUS AND BEAUTIFUL ANIMALS,

ELEGANTLY COLOURED.

By WILLIAM FREDERIC MARTYN, Esq.

IN TWO VOLUMES.

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PREFACE.

IT is the peculiar glory of the preſent age, that Science has not only flouriſhed, but been purſued to her laſt retreat. The moſt unpropitious climes have been explored; and neither the polar froſts, nor the tropic ſuns, have been able to impede the daring ſpirit of diſcovery. New countries, replete with objects before unknown, have been added to the terraqueous globe; and, as theſe reſearches have been ſyſtematically purſued by men eminent in every branch of literature, the Aſtronomer, the Geographer, and the Naturaliſt, have augmented the bounds of their reſpective ſciences.

THE infinite variety of the productions of Nature thus preſented to our view, muſt alone excite aſtoniſhment; but when we conſider the art, mechaniſm, and even the beautiful irregularity, perceptible in all her operations, we are overwhelmed with admiration! In vain do we endeavour to reduce the various objects to ſyſtematical order; the idea may pleaſe, but it is only an agreeable illuſion: new diſcoveries occaſion new difficulties in our progreſs; and the moſt aſpiring mind muſt at laſt acquieſce in acknowledging, that the CREATING ENERGY, who ſpoke all things into life, has endued his innumerous hoſts of creatures with powers adapted to their reſpective deſtinations—relative, yet diſſimilar; harmonious, yet contradictory to each other.

IN attempting to methodize, and reduce to claſſes, creatures oppoſite in their propenſities, diſpoſitions, and conformations, though accidentally correſponding in ſome particular inſtances, the lights preſented to the eyes of man ſerve only to bewilder and confound him. The analogy between ſome creatures is evident, and the genus diſtinct: this encourages him to proceed in the inveſtigation of his favourite hypotheſis; an inſuperable chaſm interrupts his progreſs, and wild conjecture uſurps the place of rational demonſtration.

INDEED, the ineffectual attempts of the profoundeſt ſcholars, and the moſt indefatigable enquirers, might have convinced ſucceeding Naturaliſts, that their abilities were not to be proved on the ſcale of ſyſtematic arrangement, but reſted rather on the accuracy of their deſcriptions, and the extent of their obſervations.

EVEN the intelligent and the penetrating Linnæus, to whom the world is under the higheſt obligations, and whoſe memory will ever be revered while taſte and ſcience remain, found it impoſſible to obviate all the difficulties of

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a generic arrangement in the different branches of Zoology: every new edition of his invaluable labours varied the preceding plan; and his laſt, the moſt unexceptionable of all, left the Lord of the Creation claſſed with Apes, Monkies, Maucaucos, and Bats!

The ſublime diſorder of Nature herſelf, too prolific to enumerate or arrange her productions; and the eſſential variations between the moſt celebrated Naturaliſts, who confound while they attempt to explain; firſt ſuggeſted the idea of offering Zoology to the world in a method hitherto unattempted.

With this view, the different tribes of beings which people the earth, the air, and the water, are not only induſtriouſly collected, and faithfully deſcribed; but their œconomy, habits, and qualities, with every other matter relative to the ſcience, are minutely explained in alphabetical order.

But though, in the preſent work, we have emancipated ourſelves from ſyſtem, we ſcruple not to retain as much method as perſpicuity may require, where a genus is compleat, and the ſpecies bearing the ſame name vary by local rather than by natural cauſes.

In the proſecution of this arduous plan, every aſſiſtance has been called in which could be derived from the moſt accurate obſervers of Nature, both ancient and modern; from authentic Voyagers and Travellers; and from the Philoſophical Tranſactions of our own, and the Memoirs of Foreign Countries.

The beautiful Delineations from Nature with which the work is at once elucidated and adorned, are all drawn and coloured from actual ſpecimens, by Naturaliſts of acknowledged reputation, who have viſited the Cabinets of the Virtuoſi in every part of Europe, and occaſionally publiſhed their reſearches; with the invaluable addition of a vaſt variety of curious Animals, which the indefatigable induſtry, the conſummate ſkill, and the munificent expence, of Sir Ashton Lever, in the eſtabliſhment of his noble Muſeum, have enabled us to lay before the public for the firſt time, from Original Drawings by the moſt ingenious Artiſts.

A NEW

Preliminary Eſſay on Generation.

IT ſeems requiſite that zoologiſts ſhould conſider animals in their naſcent ſtate, before they ſurvey them in their maturity; that they ſhould trace them from the more early periods of their exiſtence; and give a general view of thoſe diverſities in their generation which diſtinguiſh one claſs from another, before they exhibit them as poſſeſſing the moſt perfect faculties their reſpective natures will permit, or performing thoſe functions for which Providence ſeems to have peculiarly adapted them. In this eſſay, therefore, we ſhall keep this object and this duty ſolely in view; and, with a philoſophic apathy, deſcribe circumſtances and ſcenes which the nature of our undertaking requires at our hands, and which the ſenſual alone can pervert to indecency.

With that humility of mind which the reflection is calculated to inſpire, we muſt confeſs, that a time has been, when the proudeſt and nobleſt animal has participated in the ſame imbecility with the meaneſt reptile; and, while yet a candidate for exiſtence, was equally helpleſs and contemptible. In their incipient ſtate, all are upon an equality; the inſect and the moſt acute philoſopher being equally inſenſible, clogged with groſs matter, and unconſcious of exiſtence. Where then are we to commence our hiſtory of thoſe beings which make ſuch a diſtinguiſhed figure in the creation? Or, where lie thoſe peculiar characters in the parts that conſpire to form an animated nature, that mark one animal as deſtined to grovel in the duſt, and another to glitter on the throne?

The philoſophers of every age have attempted the ſolution of this queſtion, which has ever been a ſubject of curioſity: they have, indeed, formed many rational ſuppoſitions, and made conſiderable advances; but ſtill certainty is wanting to confirm their hypotheſes, and the enquiry remains unſolved with phyſical preciſion. In tracing Nature to her moſt hidden receſſes, ſhe becomes too minute or obſcure for our inſpection; ſo that we find it impoſſible to mark her firſt differences, to diſcover the point where animal life begins, or the cauſe that conduces to ſet it in motion. We know little farther, than that the greateſt number of animals require the concurrence of a male and female to re-produce their kind; and that theſe diſtinctly and invariably are found to beget creatures of their own ſpecies. But curioſity has been actively, though unſucceſsfully, employed in trying to diſcover the immediate reſult of this union; how far each ſex contributes to the beſtowing animal life; and whether we are moſt indebted for the privilege of our exiſtence to the exertions of the male or the female.

Hippocrates was of opinion, that fecundity proceeded from a commixture of the ſeminal liquor of both ſexes, each of which equally contributed to the formation of the incipient animal. Ariſtotle, on the other hand, would have the ſeminal liquor in the male alone to contribute to this purpoſe; while the province aſſigned to the female by this naturaliſt was to ſupply the proper nouriſhment for it's ſupport.

Such were the opinions of theſe fathers of philoſophy; and theſe continued as the ſacred and inviolate belief of naturaliſts and ſchoolmen for a number of ſucceeding ages.

At length, Stena and Harvey, taking anatomy for their guide, whereas the world had before proceeded on ſpeculation, afforded mankind a nearer view of nature juſt advancing into animation. Theſe obſerved, in all ſuch animals as produced their young alive, two glandular bodies, near the womb, reſembling that ovary, or cluſter of ſmall eggs, which is found in fowls; and from the analogy betwixt both, they gave theſe alſo the appellation of ovaria. As theſe reſembled eggs, by no unnatural concluſion, they imagined them deſtined for the ſame offices; and, therefore, they were induced to think that all animals, of what kind ſoever, were produced from eggs.

At firſt, however, there was ſome oppoſition made to this ſyſtem; for, as theſe ovaria were ſeparate from the womb, it was objected, that they could not, in any evident reſpect, be conducive in repleniſhing that organ, with which they had no viſible communication. But, on more minute inſpection, Trallopius, the celebrated anatomiſt, perceived two tubular veſſels depending from the womb, which, like the horns of a ſnail, poſſeſſed an inherent power of erecting themſelves, of embracing the ovaria, and of receiving the eggs, in order to be fecundated by the ſeminal fluid.

This diſcovery ſeemed, for a long time, to fix the opinions of philoſophers, and to terminate conjecture. The doctrine of Hippocrates was re-eſtabliſhed, and the principal buſineſs of generation was aſcribed to the female.

This remained likewiſe as an eſtabliſhed opinion for ſome time; but Lewenhoeck, once more, ſhook the whole ſyſtem, and produced a new ſchiſm among the admirers of abſtruſe ſpeculation. On examining the ſeminal liquor of a vaſt number of male animals with microſcopes, by which his ſight was aſſiſted far better than that of any of his predeceſſors had been, he perceived therein an infinite variety of little living creatures, like tadpoles, very briſk, and floating in the fluid, with a ſeeming voluntary motion. Each of theſe, therefore, was conſidered as the rudiments of an animal, ſimilar to that from which it was produced; and this only required a reception from the female, together with proper nouriſhment, to compleat it's growth.

The buſineſs of generation was now given back to the female a ſecond time, by many; while others ſuſpended their aſſent, and choſe rather to confeſs ignorance than embrace deluſive appearances.

In this manner has the diſpute continued for ſeveral ages; ſome accidental diſcovery ſerving, at intervals, to renew the debate, and revive curioſity. It was a ſubject where ſpeculation could find much room to diſplay itſelf; and M. de Buffon, who was fond of hypotheſes, could not overlook ſuch an opportunity of giving ſcope to his propenſity. Accordingly, this moſt elegant and moſt pleaſing of all naturaliſts diſcovered, by the aſſiſtance of the microſcope, that not only the ſeminal liquor of males, but alſo of females, abounded with theſe little living animals; and that they appeared equally briſk in either fluid. Theſe he takes not to be real animals, but organic particles, which, being ſimple, cannot be ſaid to be organized themſelves, but to go to the compoſition of all organized bodies whatever: in the ſame manner as a tooth in the wheel of a watch, cannot be denominated either the wheel or the watch, and yet contributes to the ſum and perfection of the machine.

According to this naturaliſt, theſe organical particles are diffuſed through all nature; and are found not only in the ſeminal liquor of animals, but in moſt other fluids in the parts of vegetables, and all parts of animated nature. As they happen, therefore, to be differently applied, they ſerve to conſtitute a part of the animal or the vegetable, whoſe growth they help to encreaſe, while the ſuperfluity is thrown off in the ſeminal liquor of both ſexes, for the reproduction or generation of other animals or vegetables of the ſame ſpecies. Theſe particles aſſume different figures, according to the receptacle into which they enter: falling into the womb, they unite into a fœtus; beneath the bark of a tree, they pullulate into branches; and, in ſhort, the ſame particles that firſt formed the animal in the womb, contribute to encreaſe it's growth after parturition.

But let us attend a while to the arguments of this eloquent author to eſtabliſh his principles: and when the envy that waits on living merit is extinct, it is more than probable his ſyſtem will univerſally prevail.

'The expanſion and growth,' ſays he, 'of the different parts of man's body, being effected by the intimate penetration of organic particles, analogous to each of thoſe parts, all the organic particles, in early life, are abſorbed, and entirely employed in unfolding and augmenting his different members. But, when the body of man has attained to nearly it's full ſize, he requires not the ſame quantity of organic particles; the ſurplus is therefore ſent from all parts into reſervoirs deſtined for their reception. Theſe reſervoirs are the teſtes and ſeminal veſſels. At this very period, when the growth of the body is nearly compleated, puberty commences, and every phenomenon attending it diſcovers a ſuperabundance

of nouriſhment: the voice changes into a deeper tone; the beard begins to appear; the parts deſtined for generation are ſuddenly expanded; and the ſeminal fluid fills the reſervoirs prepared for it's reception. This ſuperabundance is ſtill more evident in the female: it diſcovers itſelf by a periodic evacuation, which commences and terminates with the faculty of propagating; by a quick encreaſe of the breaſts; and by a change in the ſexual parts.

'I conceive, then, that the organic particles ſent from all parts of the body into the teſticles and ſeminal veſſels of the male, and into the ovarium of the female, compoſe the ſeminal fluid; which, in either ſex, is a kind of extract from the different parts of the body. Theſe organic particles, inſtead of uniting and forming an individual, ſimilar to that in whoſe body they are contained, as happens in vegetables and ſome imperfect animals, cannot accompliſh this end without a mixture of the fluid of both ſexes. When this mixture happens, if the organic particles of the male exceed thoſe of the female, the reſult is a male; but, if thoſe of the female are moſt abundant, a female is generated. I mean not that the organic particles of the male or of the female could ſingly produce individuals: a concurrence or union of both is requiſite to accompliſh this purpoſe. Thoſe ſmall moving bodies, called ſpermatic animals, which, by the aſſiſtance of the microſcope, are ſeen in the ſeminal fluids of all male animals, are, perhaps, organized ſubſtances proceeding from the individual which contains them; but, of themſelves, they are incapable of expanſion, or of becoming animals ſimilar to thoſe in whom they exiſt. That there are ſimilar animalcules in the ſeminal fluids of females, is a circumſtance which has often been diſputed, but may nevertheleſs be proved.

'The ancients, indeed, were ſo confident of the exiſtence of a ſeminal fluid, that they diſtinguiſhed the two ſexes by their different modes of emiſſion: *Quod intra ſe ſemen jacit, fœmina vocatur; quod in hac jacit, mas.* Ariſt. de Animal. But thoſe phyſicians who attempt to explain generation by eggs, or by ſpermatic animalcules, inſiſt that females have no particular fluid; that the mucus iſſuing from the parts has been miſtaken for a ſeminal fluid; and that the opinion of the ancients on this ſubject is deſtitute of foundation. This fluid, however, does exiſt; and the doubts concerning it have ariſen ſolely from attachment to ſyſtem, and from the difficulty of diſcovering it's reſervoir. The fluid which is ſeparated from the glands about the neck and orifice of the uterus, has no viſible reſervoir; and, as it flows out of the body, it is natural to think it is not the prolific fluid, becauſe it cannot operate in the formation of the fœtus, which is performed within the uterus. But, if a little of the male fluid enters the uterus, either by it's orifice or by abſorption, and meets with the ſmalleſt drop of the female fluid, it is ſufficient for the purpoſe of propagation. Thus, neither the obſervations of ſome anatomiſts, who maintain that the ſeminal fluid of the male can have no admiſſion into the uterus; nor the oppoſite opinion maintained by their antagoniſts; have any influence on the theory we are endeavouring to eſtabliſh.

'But the ſtrongeſt proof that the ſemen of both ſexes conduces to propagation, ariſes from the reſemblance of children to their parents. Sons, in general, reſemble their fathers more than their mothers; and daughters have a greater reſemblance to their mothers than their fathers; becauſe, with regard to the general habit of body, a man reſembles a man more than a woman; and a woman reſembles a woman more than a man. But, as to particular features or habits, children ſometimes reſemble the father, ſometimes the mother, and ſometimes both. A child, for example, will have the eyes of the father, and the mouth of the mother; or the complexion of the mother, and the ſtature of the father. Of ſuch phænomena it is impoſſible to give any explication, unleſs we admit, that both parents have contributed to the formation of the child, and conſequently, that there has been a mixture of two ſeminal fluids.'

Having endeavoured to place the ſyſtem of this eminent writer in an impartial light, we muſt briefly advert to the objections that other hypothetical enquirers have urged againſt it.

In the firſt place, it has been ſaid, that it is impoſſible to conceive organical ſubſtances without being organized; and that, if deſtitute of organization themſelves, they could never make an organized body, as an infinity of circles could never make a triangle. It has been objected, that it is more difficult to conceive the transformation of theſe organic particles, than even that of the animal whoſe growth we are enquiring after; and, conſequently, that this ſyſtem endeavours to explain one obſcure thing by another ſtill more obſcure.

It has alſo been farther maintained, that theſe little animals, which thus appear ſwimming and ſporting in almoſt every fluid, when microſcopically examined, are not real living particles, but ſome of the more opaque parts of the fluid, that are thus encreaſed in ſize, and ſeem to have a much greater ſhare of activity than they actually poſſeſs. For the motion being magnified with the object, the ſmalleſt degree of it will appear very conſiderable; and a being almoſt at reſt may, by theſe means, be apparently put into violent action. Thus, for inſtance, if we obſerve the ſails of a windmill moving at a diſtance, they appear to go very ſlow; but, if we approach them, and thus magnify their bulk to our eye, they turn round with rapidity. A microſcope, in the ſame manner, ſerves to bring our eye cloſe to the object, and thus to enlarge it; and not only to encreaſe the magnitude of it's parts, but alſo of it's motion. Hence, therefore, it would follow, that theſe organic particles which are ſaid to conſtitute the bulk of living nature, are but mere optical illuſions; and that the ſyſtem founded on them muſt likewiſe be illuſive.

On ſubjects where certainty cannot poſſibly be obtained, the mind frequently becomes bewildered; and in the ſearch of truth, which it cannot recognize even when found, loſes itſelf in boundleſs ſcepticiſm, or endleſs conjecture. Happily, however, for mankind, the moſt abſtruſe enquiries are generally the moſt uſeleſs. Inſtead, therefore, of balancing accounts between ſexes, and attempting to aſcertain to which the buſineſs of generation moſt principally belongs, it will be more inſtructive, as well as entertaining, to begin with animal nature from it's earlieſt retirements and evaneſcent outlines, and to purſue the incipient creature through all it's changes, till the period of it's coming forth perfect in it's kind.

Animals have uſually been diſtinguiſhed, with regard to their manner of generation, into the oviparous and viviparous kinds; or, in other words, into thoſe which bring forth an egg, which is afterwards hatched into life; and thoſe which bring forth their young alive and perfect. In one of theſe two modes all animals were ſuppoſed to have been produced, and all other kinds of generation were regarded as imaginary or erroneous. But later diſcoveries have taught us to be more cautious in drawing general concluſions; and have even induced many to doubt whether animal life may not be produced merely from putrefaction.

Indeed, the infinite number of creatures that ſeem to derive their birth from putrid ſubſtances, and the variety of minute inſects ſeen floating in liquors, by the aſſiſtance of the microſcope, appear to favour this opinion. Buffon obſerves, that there are perhaps as many beings, which either live or vegetate, produced by a fortuitous aſſemblage of organic particles, as by a conſtant and ſucceſſive generation. 'It is to ſuch productions,' continues he, 'that we ought to apply the axiom of the ancients, *corruptio unius, generatio alterius.* In the corruption, the fermentation, or rather in the reſolution of animal or vegetable ſubſtances, we find real animals, capable of propagating their ſpecies, though they were not themſelves produced in this manner. Theſe varieties are more extenſive than we imagine. Though it be right to generalize our ideas, to aſſemble the effects of nature under one point of view, and to claſs her productions; yet numberleſs ſhades, and even degrees, in the great ſcale of being, will always eſcape our obſervation.'

But whether we admit or diſallow the truth of equivocal generation, it is certain that the former diſtinctions of generation were too limited: for we find many animals produced neither from the womb nor from the ſhell, but merely from cuttings; ſo that to multiply life in ſome creatures, it is ſufficient to multiply the diſſection. This being the ſimpleſt method of generation, and that in which life ſeems to require the ſmalleſt preparation for it's exiſtence, we ſhall begin with it, and thus proceed from the meaneſt to the moſt elaborate.

The earth-worm, the millipedes, the marine-worm, and many other inſects belonging to the watery element, may be multiplied by being cut in pieces: but, of all other exiſtences endowed with this extraordinary method of propagation, the polypus is the moſt remarkable; and from hence we ſhall ſelect our deſcription.

The ſtructure of this creature may be compared to the finger of a glove, open at one end, and ſhut at the other. The cloſed end repreſents the tail of the polypus, with which it fixes itſelf to any ſubſtance it happens to approach; the open end may be compared to the mouth; and, if we conceive ſix or eight ſmall ſtrings iſſuing from this end, we ſhall have a diſtinct idea of it's arms, which it can erect, lengthen, and contract, at pleaſure, like the horns of a ſnail.

The polypus is extremely voracious, and makes uſe of it's arms to catch and entangle ſuch minute inſects as come within it's reach. It lengthens theſe arms ſeveral inches, keeps them ſeparated from each other, and thus occupies a large ſpace in the water, where it reſides. Theſe arms, when extended, are as fine as threads of ſilk, and poſſeſs a moſt

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exquiſite degree of feeling. If a ſmall worm happens to get within the ſphere of their activity, it is quickly entangled by one of theſe arms; and ſoon after, the others being drawn in the ſame direction to it's aid, the worm is brought to the mouth of the animal, and ſpeedily devoured, colouring the body as it is ſwallowed. Thus much is neceſſary to be obſerved of this animal's mode of living, to evince that it is a real exiſtence, and not of the vegetable tribe; but more extraordinary circumſtances ſtill remain to be unfolded concerning it. If examined with a microſcope, there are ſeen ſeveral little ſpecks, like buds, pullulating from different parts of it's body; and theſe ſoon after appear to be young polypi, which, like the larger ſort, begin to caſt their little arms about for prey, in a ſimilar manner.

Thus every polypus has a new colony ſprouting from it's body; and theſe naſcent ones, even while attached to the parent animal, become parents themſelves, having a ſtill ſmaller colony budding from them: all, at the ſame time, buſily employed in ſearching for their prey; and the food of any one of them ſerving for the nouriſhment, and circulating through the bodies of all the reſt. This ſociety, however, is every hour diſſolving; thoſe newly produced are ſeen at intervals to quit the body of the large polypus, and become, ſhortly after, the head of an incipient colony themſelves.

After this manner, the polypus multiplies in a natural courſe; but it may be increaſed by a much ſhorter and expeditious way. Though cut into a thouſand pieces, each part ſtill retains it's vivacious principle, and each ſhortly becomes a diſtinct and compleat animal. Whether cut longitudinally or tranſverſely, it is all the ſame: it gains by our endeavours, and multiplies by apparent deſtruction. The experiment has been ſo repeatedly tried, that nothing can be better confirmed than this method of generation, which may be ſtrictly called philoſophical. The famous Sir Thomas Brown hoped one day to be able to produce children by the ſame means as trees are produced: the polypus is certainly multiplied in the manner related; and every philoſopher may thus, if he pleaſes, boaſt of a numerous, though uſeleſs progeny, without being accuſed of cruelty in his experiments, as he will be encreaſing animal life, inſtead of deſtroying it.

This mode of generation, from cuttings, may well be conſidered as the ſimpleſt of all poſſible kinds; and may ſerve to ſhew how little pains Nature takes in the formation of her lower and humbler productions. As the removal of theſe from inanimate into animal exiſtence is but ſmall, few preparations are either made or become neceſſary for their journey. No organs of generation ſeem provided, no womb to receive, no covering to protect them in their ſtate of tranſition. The little reptile is quickly equipped for all the functions of it's humble ſphere; and, in a ſhort time, arrives at the ſummit of it's contemptible perfection.

The generation of animals from an egg conſtitutes the next ſuperior degree of generation. In this manner all birds, the generality of fiſhes, and many of the inſect tribes, are produced. An egg may be conſidered as a womb, detached from the body of the parent animal, in which the embryo is but juſt commencing to be formed: it may be regarded as a kind of imperfect delivery, in which parturition takes place before the offſpring has attained it's compleat formation. Fiſhes and inſects, indeed, moſt uſually commit the care of their eggs to hazard; but birds, which are more perfectly organized, are found to hatch them into maturity by the warmth of their bodies. However, any other heat, of the ſame temperature, would anſwer the purpoſe as effectually; for either the warmth of the ſun, or of a ſtove, is equally powerful in bringing the animal incloſed in the egg to a ſtate of perfect exiſtence. Nature has taken care of the viviparous animal in every ſtage of it's being. That force which ſeparates it from the parent, ſeparates it from life; and the embryo is ſhielded with unceaſing protection, till it arrives at excluſion.

It is far otherwiſe with the little animal in the egg: often totally neglected by the parent, and always ſeparable from it, every accident may retard it's growth, or even deſtroy it's exiſtence. Beſides, art, or even chance, may alſo bring this animal to a ſtate of perfection; ſo that it can never be conſidered as a compleat production of nature, in which ſo much is left for accident to accompliſh or retard.

But, inferior as this ſpecies of generation unqueſtionably is, it's conſideration will afford great inſight into that of nobler animals, as we can here watch the progreſs of the growing embryo in every period of it's exiſtence, and catch it in thoſe very moments when it ſeems ſtarting into motion. Malpighi and Haller have exerted particular induſtry on this curious ſubject; and, with a patience almoſt equal to that of a ſitting hen, have attended incubation through all it's ſtages. From them, therefore, we have a wonderful hiſtory of the chicken in the egg, and of it's gradual advances to compleat exiſtence.

It would be tedious and unintereſting to deſcribe thoſe parts of the egg which are well known and obvious, ſuch as it's ſhell, it's white, and it's yolk; but the diſpoſition and uſes of theſe are not ſo apparent. Immediately under the ſhell lies that common membrane, or ſkin, which lines it internally, every where adhering to it very cloſely, except at the broad end, where a ſmall cavity is left, which is replete with air, and which encreaſes as the incloſed animal becomes larger. Under this membrane are contained two whites, though ſeemingly only one, each wrapped up in a membrane of it's own, one white within the other. In the centre of all this is the yolk, wrapt round, likewiſe, in it's own membrane. At the end of this are two ligaments, denominated chalazæ, forming, as it were, the poles of this microcoſm; being denſe white ſubſtances, made from the membranes, and ſerving to keep the white and the yolk in their natural places.

It was the opinion of Mr. Derham, that theſe ligaments anſwered likewiſe another purpoſe: for a line being drawn from one ligament to the other, would not paſs directly through the middle of the yolk, but rather towards one ſide; and would divide the yolk into two unequal parts, by which means the chalazæ ſerved to keep the ſmalleſt ſide of the yolk always uppermoſt; and in this part he ſuppoſed the cicatricula, or firſt ſpeck of life, to reſide; which, by being uppermoſt, and conſequently next the hen, would thus enjoy the warmeſt ſituation.

But this is rather ingenious than real; the incipient animal being found in all ſituations, and appearing uninfluenced by any. This cicatricula, which is the part where the animal firſt begins to ſhew ſigns of life, is not much unlike a vetch or lentil, lying on one ſide of the yolk, and within it's membrane. All theſe contribute to the convenience or ſupport of the little animal; the exterior membranes and ligaments preſerve the fluids in their proper places; the white ſerves as nouriſhment; and the yolk, with it's membranes, after a due ſpace, becomes a part of the animal's body. Such is the nature of the egg of an hen; and the ſame deſcription applies to thoſe of birds of every ſize.

Previous to their placing the eggs under the hen, the naturaliſts from whom we derive our principal information on this ſubject, well examined the cicatricula, or little ſpot, already mentioned; which may juſtly be conſidered as the moſt important part of the egg. In ſuch as were impregnated by the cock, this was found to be large; but in thoſe laid without the cock, very ſmall. It was found, on a microſcopic examination, to be a kind of bag, containing a tranſparent fluid, in the centre of which the embryo was obſerved to reſide. The embryo reſembled a compoſition of little threads, which the genial warmth of future incubation tended to enlarge, by varying and liquifying the other fluids contained within the ſhell, and thus preſſing them either into the pores or the tubes of their ſubſtance.

The eggs being placed in a proper warmth, either expoſed to the ſun, or in a ſtove, after ſix hours, the ſpeck begins to dilate, like the pupil of the eye. The head of the chicken is diſtinctly ſeen, with the back-bone, ſomewhat reſembling a tadpole, floating in it's ambient fluid; but as yet ſeeming to aſſume none of the functions of animal life. In the ſpace of ſix hours more, the little animal is more diſtinctly ſeen; the head becomes more viſible, and the vertebræ of the back more plainly perceptible. All theſe preparatory ſigns of incipient exiſtence are encreaſed in ſix hours more; and, at the end of twenty-four, the ribs begin to aſſume their places, the neck to lengthen, and the head to incline to one ſide.

The fluids in the egg ſeem alſo at this period to have changed place; the yolk, which was before in the centre of the ſhell, approaching nearer to the broad end; the aquatic part of the white is, in ſome meaſure, evaporated through the ſhell; and the groſſer parts ſink to the ſmall end. The little animal appears to turn towards that part of the broad end, in which a cavity has been deſcribed, and, together with it's yolk, ſeems to adhere to the membrane there.

At the end of forty hours, the great work of life ſeems fully begun, and the animal plainly appears to move; the back-bone, which is of a whitiſh colour, thickens; the head is ſtill more inclined towards one ſide; the firſt rudiments of the eyes ſhew themſelves; the heart beats, and the blood already commences it's circulation. The parts, however, ſtill continue fluid; but, by degrees, become more and more tenacious, and harden into a kind of jelly.

At the expiration of two days, the liquor in which the chicken ſwims ſeems to encreaſe; the eyes exhibit the appearance of two ſmall bladders; and the heart palpitates in the manner of every embryo where the blood does not cir-

culate through the lungs. In fourteen hours more, the chicken has acquired additional ſtrength; the head, however, is ſtill bent downwards; the veins and arteries begin to branch, in order to form the brain; and the ſpinal marrow is ſeen ſtretching along the back-bone.

In three days the whole body of the naſcent animal appears bent; the head, with it's two eye-balls, and their different humours, now diſtinctly diſcloſe themſelves to view; and five other veſicles are ſeen, which ſoon unite to form the rudiments of the brain. The outlines alſo of the thighs and wings begin to be diſtinguiſhed; and the body ſeems to gather fleſh.

At the end of the fourth day, the veſicles that compoſe the brain approach each other; the wings and thighs appear more ſolid; the whole body is covered with a gelatinous ſubſtance reſembling fleſh; the heart, that was hitherto expoſed, is now concealed within the body by a very thin tranſparent membrane; and at the ſame time the umbilical veſſels, which unite the animal to the yolk, now appear to proceed from the abdomen.

After the fifth and ſixth days, the veſſels of the brain begin to be covered over; the wings and thighs lengthen and expand; the belly is cloſed up and becomes tumid; the liver is perceived within it very diſtinctly, ſtill of a very duſky white colour; both the ventricles of the heart are diſcerned, as if they conſtituted two ſeparate hearts; the whole body of the chicken is covered over; and the traces of the incipient feathers are already perceptible.

The ſeventh day, the head appears enlarged; the brain is wholly cloathed over; the bill begins to appear; and the wings, the thighs, and the legs, have acquired their perfect figure.

Hitherto, however, the animal appears as if it had two bodies; the yolk is united to it by the umbilical veſſels proceeding from the belly, and is furniſhed with it's veſſels, through which the blood circulates as through the body of the chicken, forming a greater bulk than that of the animal itſelf. But towards the end of incubation, the umbilical veſſels ſhorten the yolk; and with it the inteſtines thruſt up into the body of the animal, by the action of the muſcles of the belly; and the two bodies, as they appear, are thus formed into one.

During this ſtate, all the organs are obſerved to perform their ſecretions; the bile is found to be ſeparated, as in grown animals; but it is fluid, tranſparent, and taſteleſs: the chicken then appears alſo to have lungs.

On the tenth day, the muſcles of the wings appear, and the feathers begin to be protruded. On the eleventh, the heart, which had hitherto ſeemed divided, begins to unite; and the correſponding arteries unite, like the inſertion of the fingers into the palm of the hand.

By the eleventh day, the animal being thus compleatly formed, begins to gather ſtrength, becomes more uneaſy in it's ſituation, and exerts it's vital powers with encreaſing force. For ſome time before it is able to break through it's priſon, it is heard to chirrup, receiving a ſufficient quantity of air for this purpoſe from the cavity lying between the membrane and the ſhell, and which muſt neceſſarily contain air to reſiſt the external preſſure.

At length, on the twentieth day in ſome birds, and later in others, the incloſed animal breaks the ſhell within which it had been confined, with it's beak; and, by repeated efforts, at laſt procures it's liberation.

From this minute hiſtory of incipient life, in a humble race in the ſcale of creation, we may readily perceive, that thoſe parts which are moſt conducive to life are firſt begun: the head and the back-bone, which encloſe the brain and the ſpinal marrow, though both are too limpid to be diſcerned, are the firſt that appear to exiſt; the beating of the heart is perceived ſoon after; the leſs noble parts ſeem to ſpring from theſe; the wings, the thighs, the feet, and, laſtly, the bill. Whatever, therefore, the animal poſſeſſes double, or whatever it can live without the immediate uſe of, are lateſt in production: Nature thus appears ſedulous in applying to the formation of the nobler organs, without which life would be but of ſhort continuance, and would be begun in vain.

From analogy we may infer, that the reſemblance between the incipient animal in the egg, and the embryo in the womb, is very ſtriking; and this ſimilitude has induced many to aſſert, that all animals are produced in like manner from eggs. Thoſe who maintain the ovarious ſyſtem, conſider an egg excluded from the body by ſome, and ſeparated into the womb by others, as actions of the ſame kind; with this only difference, that the nouriſhment of the one is retained within the body of the parent, and encreaſes as the embryo happens to want the ſupply; the nouriſhment of the other is prepared all at once, and furniſhed by the producing animal as a ſtock entirely ſufficient for the future ſupport of it's offſpring.

But, leaving this to the diſcuſſion of anatomiſts, let us proceed rather with facts than opinions; and, as we have ſeen the progreſs of an oviparous animal, let us likewiſe trace that of a viviparous one.

In the inveſtigation of this ſubject, De Graaf has, with almoſt unexampled patience and ſedulity, attended the progreſs and increaſe of various animals in the womb, and minutely marked the changes they undergo. Having diſſected a rabbit half an hour after impregnation, he perceived the horns of the womb, that embrace and communicate with the ovary, to be redder than before; but no other change was viſible in the other parts. Having diſſected another, ſix hours after, he perceived the follicules, or the membrane covering the eggs contained in the ovary, to become reddiſh. In a rabbit diſſected after twenty-four hours, he perceived, in one of the ovaries, three follicules; and, in another, five, that had undergone ſome change, exhibiting a dark and reddiſh appearance, whereas they uſually are tranſparent. In one diſſected after three days, the horns of the womb were obſerved to embrace the ovaries very cloſely; and he obſerved three follicules in them, much larger and harder than before.

Purſuing his inquiſition, he alſo found two ſubſtances reſembling eggs actually ſeparated into the horns of the womb, each about the ſize of a grain of muſtard-ſeed: theſe were ſeparately incloſed in a double membrane, the inner parts being repleniſhed with a very limpid liquor.

After four days, he found in one of the ovaries four, and in the other five follicules, emptied of what he calls their eggs; and, in the horns correſponding with theſe, he obſerved an equal number of eggs thus ſeparated, which were grown ſtill larger. In five days time, they were ſtill more encreaſed in ſize: in ſeven, they were found as big as a piſtol-bullet, each covered with it's double membrane, and theſe much more diſtinct than before.

At the expiration of nine days, having examined the liquor contained in one of theſe eggs, he found it was become leſs fluid, and limpid. In ten days, a cloud ſeemed to thicken on it's ſurface, and to form an oblong body, of the figure of a little worm; and in twelve days, the figure of the embryo was diſtinctly perceptible, and even it's parts were diſtinguiſhable. In the region of the breaſt, he perceived two bloody, and two whitiſh ſpecks.

Fourteen days after impregnation, the head of the embryo was become large and tranſparent, the eyes prominent, the mouth open, and the rudiments of the ears began to appear: the back-bone, which was of a whitiſh colour, inclined towards the breaſt; the two bloody ſpecks, obſerved before, now exhibited the outlines of the two ventricles of the heart; and the two whitiſh ſpecks on each ſide, appeared to be the rudiments of the lungs. Towards the region of the belly, the liver began to diſcloſe itſelf, and to aſſume a reddiſh colour; and a little intricate maſs, like ravelled thread, ſoon appeared to be the origin of the ſtomach and inteſtines. The legs ſpeedily became viſible, and aſſumed their natural poſition; and from that time forth, all the parts being formed, every day ſerved to develope and expand them ſtill more, till the thirty-firſt day arrived, on which the rabbit brought forth her young in due courſe of nature.

Thus having ſurveyed the different modes and ſtages of generation in the more ignoble animals, let us take a view of it's progreſs in man, and inveſtigate the feeble beginnings of our own exiſtence.

An account of the lowlineſs of our own origin, if it ſhould not prove entertaining, will, at leaſt, ſerve to humble us; and it may diminiſh our pride, though it fails to gratify our curioſity. In this caſe we cannot ſo accurately trace the commencement of the incipient animal, as in the former inſtances; for the opportunities of inſpection are but few and accidental. We muſt therefore content ourſelves to fill up the blanks of our hiſtory with rational conjecture, where ocular demonſtration has never been procured.

Immediately after conception, we have no regular idea of the ſtate of the embryo in the womb. However, anatomiſts inform us, that four days after conception, an oval ſubſtance is perceived in the womb, about the magnitude of a ſmall pea, but longer one way than the other. This little body is formed by an extremely fine membrane, incloſing a liquor bearing a ſtrong reſemblance to the white of an egg: and in this, ſeveral ſmall fibres, united together, have been diſtinguiſhed, which unqueſtionably form the firſt rudiments of the embryo. Beſides, there are ſeen another ſet of fibres, which ſoon after form themſelves into the placenta, or that body by which the incipient being is ſupplied with nouriſhment.

At

At the ſpace of ſeven days after conception, we can readily diſtinguiſh by the eye the firſt lineaments of the child in the womb. However, they are as yet without form; being a ſmall gelatinous maſs, yet exhibiting the rudiments of the head; the trunk being alſo in ſome meaſure diſtinguiſhable, together with a ſmall aſſemblage of fibres iſſuing from the body of the infant, which afterwards become the blood-veſſels that convey nouriſhment from the placenta to the child while incloſed in the womb.

Fifteen days after conception, the head becomes more diſtinctly viſible, and even the moſt prominent features of the viſage begin to appear. The noſe is a little elevated; there are two black ſpecks in the place of eyes; and two little apertures, where the ears are afterwards formed. The body of the embryo is alſo grown larger; and both above and below, are two little protuberances, which mark the places from whence the arms and legs are deſtined to proceed. The whole length of the fœtus at this time is leſs than half an inch.

Three weeks after conception, the body has received but very little encreaſe; but the legs and feet, with the hands and arms, are become unfolded. The growth of the arms is more rapid than that of the legs; and the ſeparation of the fingers takes place ſooner than the toes. About this time, the internal parts are found, on diſſection, to be ſlightly diſtinguiſhable. The places of the bones are marked by ſmall filiform ſubſtances, that are yet more fluid than a common jelly. Among them, the ribs are perceivable, exhibiting the ſame appearance, diſpoſed on each ſide of the ſpine; and even the fingers and the toes ſcarcely exceed the thickneſs of a hair.

The embryo, in about the ſpace of a month, is nearly an inch long; the body is bent forward, a ſituation it almoſt uniformly aſſumes in the womb; either becauſe this poſture is moſt convenient, or becauſe it requires leaſt room. The human figure now becomes extremely evident; every part of the face is diſtinguiſhable; the body is ſketched out; the bowels appear like threads; the bones are ſtill quite ſoft, but in ſome places begin to aſſume a greater rigidity; the veſſels communicating with the placenta are plainly ſeen iſſuing from the navel, and beginning to ſpread themſelves in the placenta. If we may give credit to Hippocrates, that great father of phyſic, the male embryo developes ſooner than the female: he adds, that the parts of the body of the male are diſtinguiſhable at the end of thirty days; while thoſe of the female are not ſo evident till the expiration of forty.

In ſix weeks, the embryo has acquired the length of two inches; the human figure daily becomes more and more diſtinct; the motion of the heart is almoſt perceptible by the naked eye; and, in an embryo of fifty days old, it has been obſerved to palpitate for ſome time after it's removal from the womb.

In two months, the oſſification is perceivable in the arms and thighs of the embryo, and in the tip of the chin, the under jaw being greatly advanced before the upper. Theſe parts, however, may ſtill be conſidered as bony points, rather than as real bones. The umbilical veſſels, which before went ſide by ſide, now begin to be twiſted over each other, like a rope, and go to join with the placenta, which as yet remains very ſmall.

At the expiration of three months, the embryo is above three inches long, and weighs as many ounces. Hippocrates obſerves, that the mother does not become ſenſible of the child's motion till that period; and he adds, that in female children this motion is not perceptible till the end of four months. However, this is not an obſervation that can be uniformly relied on; for ſome women aſſert, that they perceive themſelves to be quick with child (to uſe their own mode of expreſſion) at the end of two months; ſo that this quickneſs ſeems rather to originate from the proportion between the child's ſtrength, and the mother's ſenſibility, than from any determinate ſpace of time. At all times, indeed, the child is equally alive; and conſequently, thoſe juries of matrons, which in this country frequently determine on the pregnancy of criminals, ſhould not enquire whether the culprit be quick, but whether ſhe be enſient; if the latter be perceivable, the former follows of courſe.

Four months and an half after conception, the embryo is from ſix to ſeven inches in length; and all the parts have received a proportionable encreaſe. The very nails begin to appear on the fingers and toes; and the ſtomach and inteſtines aſſume their functions of receiving and digeſting. A liquor is found in the ſtomach ſimilar to that in which the embryo floats; in one part of the inteſtines, a milky ſubſtance; and, in the other, an excrementitious. There is alſo found a ſmall quantity of bile in the gall-bladder; and ſome urine in it's proper receptacle.

By this time alſo, the poſture of the embryo ſeems determined and fixed. The head is bent forward, ſo that the chin ſeems to reſt on the breaſt; the knees are raiſed up towards the head; and the legs are bent backwards, ſomewhat reſembling the attitude of thoſe that ſit on their haunches. Sometimes the knees are raiſed ſo high as to touch the cheeks, and the feet are croſſed over each other; the arms are laid on the breaſt; while one of the hands, and often both, touch the viſage; ſometimes the hands are ſhut, and ſometimes alſo the hands depend by the ſides. Theſe are the moſt uſual poſtures that the embryo aſſumes; but there it is frequently known to change; and from theſe alterations ariſe thoſe frequent uneaſy ſenſations which pregnant women are very liable to feel.

Thus ſituated, the naſcent being is furniſhed by nature with all things proper for it's ſupport; and, as it encreaſes in ſize, it's nouriſhment is found alſo to encreaſe with it. When it firſt begins to grow in the womb, that receptacle, from being naturally very ſmall, becomes proportionably larger; and, what is more extraordinary, at the ſame time becomes thicker alſo. The ſides of a bladder, we well know, the more they are diſtended, the thinner they are; but, in this caſe, the larger the womb grows, the more it thickens. Within this the embryo is ſtill farther involved, in two membranes, called the chorion and amnios; and floats in a thin tranſparent fluid, on which it ſeems, in ſome meaſure, to ſubſiſt. However, the great ſtore-houſe, from whence it's chief nouriſhment is derived, is the placenta; a red ſubſtance, ſomewhat reſembling a ſponge, which adheres to the inſide of the womb, and communicates by means of the umbilical veſſels with the embryo. Theſe umbilical veſſels, conſiſting of a vein and two arteries, iſſue from the navel of the child, and are ramified on the placenta, where they ſeem actually to conſtitute it's ſubſtance; and, if it may be ſo expreſſed, to ſuck up their nouriſhment from the womb, and it's contained fluids. The blood, thus received from the womb by the placenta, and communicated by the umbilical vein to the body of the embryo, is conveyed to the heart; where, without ever paſſing into the lungs, as in the infant born, it takes a ſhorter courſe: for, entering the right auricle of the heart, inſtead of paſſing up into the pulmonary artery, it ſeems to break this partition, and proceeds directly through the body of the heart, by an aperture called the foramen ovale; and from thence to the aorta, or great artery, by which it is diſperſed into all parts of the body.

Thus, in a conſiderable meaſure, we find the placenta ſupplying the place of lungs; for as the little being can receive no air by inſpiration, the lungs are therefore entirely uſeleſs. But we ſee the placenta converting the fluid of the womb into blood, and ſending it by the umbilical vein to the heart; from which it is diſpatched, by a quicker and ſhorter circulation, through the whole frame.

After this manner the embryo repoſes in the womb, ſupplied with that nutrition which it's neceſſities require, and furniſhed with thoſe organs which are adapted to it's ſituation. As it's ſenſations are few, it's wants are in the ſame proportion; and it is probable, that an almoſt continuous ſleep, with a few intervals of waking, fills up the earlieſt periods of exiſtence. As the little creature, however, gains ſtrength and ſize, it ſeems to become more watchful and reſtleſs: even in the womb, it begins to feel the want of ſomething unpoſſeſſed; a ſenſation that ſeems coeval with the dawn of human life, and which never quits us till death. Even then the embryo begins to ſtruggle for the acquiſition of a ſtate more marked by pleaſure and pain; and, from about the ſixth month, commences it's warnings to the mother of the greater pain ſhe is deſtined to endure.

The duration of pregnancy in women, is uſually nine months; but there have been many inſtances of children born at ſeven, that have been perfect, and exhibited no marks of premature birth; while parturition has ſometimes been delayed till nearly the expiration of the tenth month.

When the appointed time approaches, the infant begins to redouble it's efforts for liberty. The head is applied downwards, towards the aperture of the womb; and by reiterated efforts it endeavours to extend the ſame. Theſe exertions produce the pain which all women in labour in ſome degree or other feel: thoſe of ſtrong conſtitutions the leaſt; thoſe who are weakly, with moſt ſeverity; ſince we learn that the African women always deliver themſelves; and in a few hours afterwards are perfectly recovered; while the European women need aſſiſtance, and require ſome time to re-eſtabliſh their health, after the violence of the ſhock parturition occaſions.

The efforts of the child at laſt prevail: it's head breaks through thoſe natural obſtacles which are formed to yield, and it iſſues into life. The blood which had hitherto paſſed through the heart, as has been previouſly deſcribed, now takes a

wider

wider circuit; the foramen ovale cloſes; the lungs, hitherto inactive, now firſt aſſume their functions; the irruption of the air diſtends them; and this produces the firſt ſenſation of pain, which the animal expreſſes by a ſhriek: ſo that the commencement of our lives, as well as their termination, is marked with pain.

On a due compariſon of the different modes of generation, we ſhall neceſſarily draw this concluſion, that the moſt laboured is the moſt perfect. Of all others, man ſeems the ſloweſt in coming into life, as he is the ſloweſt in arriving at perfection: other animals, of the ſame magnitude, ſeldom remain in the womb above ſix months, while he continues nine; and, even after his birth, his ſtate of imbecility appears prolonged above that of any other.

We may alſo obſerve, that the generation is the moſt compleat by which the feweſt animals are produced. Nature, by attending to one at a time, ſeems to exert all her efforts in bringing it to adequate perfection; but, where this attention is divided, the animals ſo produced come into the world with partial advantages. Thus twins are never, while infants at leaſt, ſo ſtrong or ſo large as thoſe that come ſingly into the world; each having in ſome meaſure deprived the other of it's right; as that ſupport which Nature intended for one, has been laviſhly divided.

And as the moſt noble animals are produced ſingly, ſo we find that creatures of this deſcription are likewiſe the leaſt prolific: theſe uſually produce ſingly, and at long intervals; while the more ignoble kinds are more rapid in their returns, and more numerous in their births. All the oviparous tribes, and even ſome of the viviparous animals, encreaſe in a ſeeming proportion to their minuteneſs and imperfection. Nature appears laviſh of life in the lower orders of creation; and, as if ſhe intended ſuch merely for the uſe of the higher claſſes of animated beings, ſhe appears to have beſtowed more attention in multiplying the number than in compleating the kind. Thus, while the horſe and the elephant produce but one at a time, the ſpider and the beetle bring forth in thouſands: and even among the ſmaller quadrupeds, all the inferior kinds are extremely fertile.

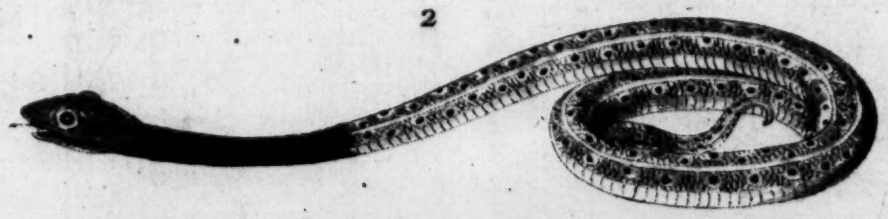
Hence it is evident, that the ſmalleſt animals multiply in the greateſt proportion; and we have abundant reaſon for gratitude to Providence, that the moſt formidable animals are the leaſt fruitful. Had the lion and the tiger the ſame fecundity with the rabbit or the rat, all the arts of man would be ineffectual to oppoſe theſe fierce invaders; and they would long ere now have become maſters of thoſe who are themſelves emphatically ſtiled the lords of the creation. But Heaven has oppoſed to man only ſuch enemies as he has received ſtrength and art to conquer; and as large animals require proportional ſupplies, it has with-held life where it has not furniſhed the proper means of ſubſiſtence.

In conſequence of this pre-eſtabliſhed order, the moſt perfect animals ſeldom begin to procreate till they have nearly acquired their full growth; while the inferior tribes frequently generate before they have arrived at half their natural ſize.

In whatever light, therefore, we view this ſubject, we ſhall find room for admiration and thankfulneſs; we ſhall be impreſſed with a due ſenſe of the ſuperior advantages conferred on man, both in the mode of his production, and in the means provided for his future welfare: and while we acknowledge the diſtinctions which Providence has beſtowed on our material part, let us not forget the much more exalted nature of the ſoul; that endowment which places us infinitely above the higheſt orders of irrational exiſtence, and which gives us a title to immortality!

A NEW

N° 1



1. ABERDAVINE. 2. ACONTIAS. 3. ADMIRABLE. 4. WHITE ADMIRABLE. 5. GRAND ADMIRAL.

6. REAR ADMIRAL. 7. AGOUTI. 8. ALBATROSS.

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A NEW DICTIONARY OF NATURAL HISTORY; OR, COMPLEAT UNIVERSAL DISPLAY OF ANIMATED NATURE.

A.

ABE

ABACATUAIA. An American fiſh, in ſhape, ſize, and figure, reſembling the common plaiſe; or, rather, the European doree, or faber. It's mouth is ſmall, and deſtitute of teeth; and the eyes have each a black pupil, with a fine ſilvery iris. It is furniſhed with five fins: one of which is dorſal, and another abdominal, each running to the tail; there are two at the gills; and the tail, which is conſiderably forked, makes the fifth. This fiſh, which is commonly caught on the ſhores of the Brazils, is eſteemed wholeſome food. Artedi makes it a ſpecies of the zeus; and Linnæus the zeus gallus, belonging to the thoracic order of fiſhes.

ABACAY. One of the numerous ſpecies of parrots found in the Philippine iſlands, called alſo by the natives calangay.

ABDOMINAL FISH. A diſtinct order in the Linnæan ſyſtem, diſtinguiſhed by having the ventral fins placed behind the pectoral in the abdomen; and comprehending ſeventeen genera, and an hundred and twenty-ſeven ſpecies.

ABERDAVINE. The name uſually given in London to the ſiſkin, where it is ſold as a ſong-bird, and ſometimes at a very conſiderable price. The crown of the male is black, the neck and back are green, except the ſhafts on the latter, which are black; the rump, throat, and breaſt, are of a greeniſh yellow; the belly is white; the vent feathers are yellowiſh, and marked with central oblong duſky ſpots; the pinion quill is of a duſky hue, edged with green; and the exterior webs of the nine ſucceeding quill-feathers are green, which colour widens by degrees on every feather, till it occupies half the length: from the tenth feather nearly the lower half of each feather is yellow, and the upper black; the exterior coverts of the wings, and the two middle feathers of the tail, are black; the reſt of the tail above half-way up is of a delightful yellow, tipped with black.

The female is diſtinguiſhed by the paleneſs of her colours, and by her throat and ſides being

ACA

white ſpotted with brown; and her head and back are of a greeniſh aſh-colour, alſo ſpotted with brown.

In Suſſex the Aberdavine obtains the name of the barley-bird, becauſe it uſually viſits that county about the barley ſeed-time; though the ſeaſons at which it arrives in England are very uncertain. It is a bird of paſſage, and ſuppoſed to come from Ruſſia and Germany. In the woods on the banks of the Danube, we are informed by Kramer that it forms it's neſt with ſuch amazing ſecurity, that though there are an infinite number of young birds to be ſeen, no one could ever diſcover a neſt.

ABLET, or ALBLEN. A name given by ſome naturaliſts to the common bleak, a ſmall freſh-water fiſh, called in Latin albumus, and which appears to be truly and properly a ſpecies of the cyprinus. Artedi diſtinguiſhes it by the name of the five-inch cyprinus with twenty rays in the pinna ani.

ACACALOTL. An American bird, by ſome called the corvus aquaticus, or water-raven. The male of this ſpecies meaſures four ſpans from it's beak to the tip of it's tail; and it's legs are a ſpan and a half long. The beak is about ſix inches long, of a blue colour, and incurvated like a bow. The head is ſmall; the breaſt and belly are of a variegated red and brown colour; and the back is beautifully intermixed with a vivid purple, black, and green. The wings are of a delightful green, which looks very bright and gloſſy in the ſun.

This elegant bird is a native of Mexico, and frequents the rivers and lakes, where it feeds on fiſh. It is moderately fleſhy, but coarſe, and of a rank fiſhy taſte, though not reckoned unwholeſome.

ACANTHIAS. A name uſually given to the fiſh whoſe ſkin is uſed in poliſhing by cabinet-makers and other artificers, and by them called ſimply fiſh-ſkin. See GALEUS.

ACANTHOPTERYGII. A diſtinct order of fiſhes; whoſe general characteriſtic is, that the rays of the fins are bony, and ſome of them prickly at their extremities. Under this claſs are comprehended the ſeventeen following genera: gaſtereſteus,

tus, cheelodon, zeus, cottus, trigla, ſcorpœna, trachinus, perca, ſciæna, ſparus, labrus, mugil, ſcomber, xiphias, gobius, blennius, and ophidion. The term is derived from the Greek akantha, a thorn; and pterygion, a fin.

ACARA. A freſh-water fiſh of the Brazils, eſteemed very delicate and nutritious food. It's length ſeldom exceeds four inches; the mouth is ſmall, the jaws are rough like a file, and the back riſes like that of the perch. One long back fin, ſupported by a great number of rigid and prickly rays, runs to the tail. The fins are all brown; the ſcales are large; the back is of a gloſſy brown; the ſides and belly are white; and the tail is undivided. A large black ſpot appears on each ſide near it's middle, and there is another near the tail.

ACARAAYA. A fiſh caught on the Brazilian ſhores, by ſome called garanha. It reſembles the carp, and commonly grows to three feet in length. The lower jaw is furniſhed with an even range of ſharp teeth, like ſmall needles; and the upper has two very long teeth, with a great number of ſhort ones. The eyes are large and red; and the tail is broad, and a little furcated. The ſcales are moderately large, of a ſilvery hue, with an admixture of purple. The under part of the head and the belly are of a pure white; and the fins of a fine pale red, except thoſe under the belly, which are white, ſlightly edged with red. This fiſh is much uſed in Brazil, both freſh and ſalted.

ACARAMUCU. A fiſh caught in the Weſtern Ocean, and ſome other ſeas, of a very ſingular and remarkable form. It's body is flatted and taper, about eight inches long, and three broad. The mouth is round, but ſo ſmall as ſcarcely to admit the end of a man's little finger. In the fore-part of the mouth, both in the upper and under-jaw, are triangular and ſharp teeth, which eaſily pierce. On each ſide, exactly below the eyes, are two ſquare fiſſures, which ſupply the place of gills; and on the ridge of the back, directly behind the eyes, is placed a fine, ſlender, pointed horn, of a cylindrical ſhape, and about three inches long, ſtanding nearly erect, though with a little incurvation backwards. The ſkin is ſmooth, of a variegated greyiſh and browniſh colour, and entirely deſtitute of ſcales. This fiſh uſually feeds on ſea-weeds, and it's fleſh is reckoned improper to be eaten.

ACARAPEBA. An American fiſh, to which ſome have alſo given the name of broſeme. It grows to nearly a foot in length, and four inches in breadth; the body is ſomewhat broad and flattened, and covered with large ſcales of a fine ſilvery whiteneſs. The mouth is large, but deſtitute of teeth; and the tail is furcated. It has one long black fin, the anterior rays of which are rigid and prickly, and the poſterior ones ſoft and flexile. The other fins are of a pure white, like the reſt of the body. This fiſh ſeems to be a ſpecies of ſmaris.

ACARAPINIMIA. A Brazilian fiſh of the cantharus kind, and not very diſſimilar to the cantharus of the Mediterranean deſcribed by Ray.

ACARAPITAMBA. A fiſh belonging to the Brazilian ſeas, of an oblong figure, reſembling the mullet, and uſually growing to upwards of two feet in length. The mouth and teeth are extremely diminutive in proportion to it's ſize. Along the back runs one long fin, which reaches nearly to the tail, ſupported by rigid and prickly rays. The tail terminates in two oblique horns; the ſcales are large, and of a purpliſh colour, with a beautiful admixture of blue; and along the middle of each ſide there runs from the gills to the tail a very broad and elegant gold-coloured line. The back, till it reaches this line, is variegated with ſmall gold-coloured ſpots; and, under the line, the ſides are likewiſe variegated with beautiful longitudinal ſmall gold-coloured lines of a paler tinge than the broad one. The belly of this curious fiſh is white, and it's fins are yellow.

ACARAPUCU. A Brazilian freſh-water fiſh, about eighteen inches long, of a rounded body and ſmall flat mouth. This fiſh, which is eſteemed very wholeſome food, has no teeth, but can conceal it's mouth at pleaſure. The tail is long and furcated; the ſcales are of a ſilvery hue; the back exhibits a fine golden gloſs, ſhining through the whiteneſs; and there are ſix large blue ſpots on the ſides. The back, tail, and ſide fins, are of a pale blue; and the belly fins are of a yellowiſh tinge. This fiſh is very palatable and nutritious.

ACARAUNA. A fiſh caught in the American ſeas, of which Willoughby deſcribes two ſpecies: the one called ſimply Acarauna; the other Acarauna quadrata, or ſquare Acarauna; and, by our navigators, the old wife.

The common Acarauna is of a broad and flattened ſhape, uſually growing to about four or five inches in length; covered with ſmall blackiſh ſcales, and furniſhed with a large furcated tail. It has two fins under the gills; two more under the belly; a fifth running all along the back; and a ſixth correſponding with it from the anus to the tail. The mouth is ſmall and narrow; the teeth are diminutive and acuated; and the eyes ſmall. It contains an extremely ſharp thorn, or prickle, on each ſide near the tail, which it can ſheath or unſheath at pleaſure, and with which it occaſionally annoys any fiſh which comes in it's way.

The ſquare Acarauna, or old wife, nearly reſembles the former in ſize; but, being ſeldom caught, it is deemed worthy a place in the cabinets of the curious. It is of a pale brown colour; with the tail and fore-part of the body of a pale yellow, or rather a ſtraw-colour. It is cloathed with ſcales furrowed with ſlight parallel lines, except the anterior part of the head, which is covered with a naked, but rough ſkin. The top of the head riſes into an acute angle; the forehead is flat; the eyes are round, large and prominent; the mouth is exceedingly ſmall; and the teeth are ſlender, and cloſe ſet. The upper-jaw contains four ſharp thorns growing on each ſide; and the lower, two very large and ſharp ones, bending downwards, in ſhape and formation reſembling a cock's ſpur; from which run up two rows of ſmall prickles to the eyes.

ACARNAN. A ſmall ſea-fiſh very common in the Mediterranean, and generally expoſed to ſale among rubellios or erythrini, called by the fiſhermen fravolino. It greatly reſembles the erythrinus; but as that is of a fine red, this, on the contrary, is of a ſilvery whiteneſs. The mouth is moderately large; the teeth are ſlender, and pointed; and the eyes, which are large, are of a beautiful yellow. The fins are perfectly white, except having each a black ſpot at their origin. Naturaliſts are at a loſs to determine whether this fiſh is any ways different from the erythrinus except in colour, which is not held a ſufficient diſtinction to conſtitute another ſpecies.

ACARUS, or ACARI. A ſpecies of vermin lodged under the cutis; where, preying on the parts, it excites an itching, and raiſes pimples. A German phyſician has traced the origin of the Acari, which

which he imputes to milk-meats turning ſtale and ſour. The ſeat of theſe inſects is chiefly in the hands and feet, though they are ſometimes found in the arms and legs.

ACARUS is alſo uſed by naturaliſts as a claſſical name of the lice of animals, whoſe genera are almoſt as numerous as the animals on which they breed. In the Linnæan ſyſtem it is a genus of aptera, with eight legs, two eyes at the ſides of the head, and two jointed tentacula, comprehending thirty-five ſpecies, of which the following are the moſt remarkable.

Acarus with very long legs, called by Mouſet the long-legged ſpider, and by Ray and others the aſh-coloured creſted ſpider.

Acarus with nippers like crabs, has the fore-legs formed like thoſe of a crab or ſcorpion, for which reaſon it is by ſome called the ſcorpion ſpider. This inſect has a roundiſh inflated body of a whitiſh colour, covered with a thin ſmooth ſkin; the head is ſmall, and of a duſky hue towards the mouth. It is frequently found in old rotten wood.

Acarus with very long fore-feet, is about the ſize of a nit. The body is long, and of a wax-colour, the legs being pale. It is found chiefly on champignons.

Acarus with the ſecond pair of legs very thick, is always ſeen on the ground, particularly in gardens. It is armed with four exceeding ſmall teeth; it's ſize is inferior to that of a louſe; and it's colour is a dull cheſnut.

Acarus with the third pair of feet largeſt, by ſome called the bird flea, from it's being found on that tribe of animals.

Acarus red, with the fore-feet longeſt, and the hind part of the belly forked, is remarkable for having two ſmall horns near the lower belly.

Acarus, with a livid belly of a ſallow colour, oval before and with feelers like clubs, by ſome naturaliſts is called the dog-louſe, and is known by a black round ſpot near the baſe of the lower body. The breaſt is ſcarcely perceptible; the head is ſmall and black; the mouth is forked; and the feet are black.

Acarus depreſſed, aſh-coloured, with rough ſides, is a very ſmall inſect, which appears in the beginning of ſpring, but at other times retires into the earth.

Acarus with a depreſſed belly, by ſome called the red little water-ſpider, lives entirely on the water, is often ſeen on lakes, and runs with great velocity.

Acarus with a depreſſed belly, by Ray called the red ſmall earth-ſpider, is found only in the earth.

Acarus red, with ſides of a darker colour, is a very common inſect, living upon trees, and remarkable for it's ſwiftneſs.

Theſe are the moſt conſiderable Acari; but ſo numerous are their tribes, and ſo widely are they diſſeminated through animate and inanimate objects, that neither the naturaliſt can enumerate them, nor the naked eye behold them. Myriads ſwarm around, imperceptible to us: they float in our drink; overſpread our food and fruits; and, if continually viewed with a microſcopic eye, would make us loath the choiceſt viands, abjure the nectareous cup, and nauſeate the moſt delicious productions of nature. Even thoſe inſects which we call Acari, have likewiſe their Acari, endued with life and motion, and capable of enjoyments ſuited to their reſpective ſpheres of action.

ACBAB. A bird of the Philippine iſlands, generally found in a wild ſtate, and very much reſembling our common hen. It feeds on rice and other vegetables; but, being ſhort-winded, and incapable of taking long flights, is eaſily caught. It is reckoned wholeſome food, and is therefore often deſtroyed.

ACCIPENSER. In the Linnæan ſyſtem, a genus of fiſh, of the order of nantes, and claſs of amphibia. The diſtinguiſhing characteriſtics of this genus are, that the mouth is retractile, and deſtitute of teeth; and the gills have only one hole or aperture on each ſide.

Of this genus there are only three ſpecies: the ſturgeon, the Accipenſer ruthenus, and the huſo or iſinglaſs-fiſh.

A variety of diſputes have originated among naturaliſts, whether the ſturio or ſturgeon be the ſame fiſh with the Accipenſer; and what conſtituted the difference between the Accipenſer and the ſilurus of the ancients: but the reſult of the whole appears to be no more than this, that the Romans gave the name of Accipenſer to the ſturgeon which was caught in their own ſeas, and uſed freſh; and called that ſilurus which was imported in pickle from the coaſts of Greece.

ACCIPITER. The name of a whole order of birds, the general characteriſtic of which is their having a hooked or aduncated beak. Of this order there are four genera; the vultur, falco, ſtrix, and lanius; and ſeventy-eight different ſpecies. See VULTURE, OWL, FALCON, and HAWK.

ACCIPITER. A name given by Gellius and other ancient writers to the fiſh uſually called milvus and lucerna. Artedi diſtinguiſhes it by the name of trigla with the head a little acculcated, and a ſingular fin placed near thoſe of the pectoral.

ACEPHALOUS. A term given to ſuch animals as are either deſtitute, or ſuppoſed to be deſtitute, of heads. Thus the lumbricus latus, or joint-worm, was long imagined to be Acephalous; but Tulpius, and after him Fehr, diſcovered that it did not poſſeſs this uncommon property; the former, indeed, making it biceps, or two-headed. The ancient naturaliſts, at the head of whom is Pliny, amuſed themſelves with notions of Acephalous men and women, as well as Acephalous animals; but whether they applied the term by way of ſarcaſm, or really thought ſuch people exiſted, remains unknown. Certain it is, that though by ſome aberration of nature there may have been Acephalous individuals, there never was, nor could be, a whole nation which poſſeſſed this ſingularity.

ACERINA. A name given by Pliny, and the old naturaliſts, to the fiſh called in modern times ceruna, and aurata fluviatilis; in Engliſh, the ruffe. This is unqueſtionably a genuine ſpecies of perch, and is diſtinguiſhed from other fiſh of that genus by having the dorſal fin ſingle and the head cavernous.

ACHAC. A Philippine bird, about the ſize of a common hen. The belly, breaſt, and neck, are of a pale brown, and the back is of a duſky reddiſh hue: the wings are principally compoſed of blueiſh green feathers of extraordinary beauty; the tail is white, ſhort, and continually in motion; the eyes are black; the beak is of a thick, ſtrong, obtuſe figure, tinged with black; the legs are reddiſh, and the claws are black. This bird, which is properly of the partridge kind, lives chiefly about the cultivated parts of the Philippine iſlands, feeding on rice and other vegetables; and, when diſturbed, ſeems to repeat the word 'Phi! Phi!' without intermiſſion.

ACHALALACTLI. A beautiful American bird, remarkable for an annulus or ring of ſilvery whiteneſs round it's neck. It is nearly the ſize of a pigeon; the beak is ſharp, and about three fingers breadth long; the head is ornamented with a long creſt of a blueiſh black hue; the belly, and the under-ſide of the wings, are white; the back, and the exterior part of the wings, like the creſt, are of a blueiſh black, variegated with white ſpots; and the tail is partly black, and partly blue. This bird is commonly ſeen near the lakes and rivers of Mexico, where it feeds on ſmall fiſh, which give it a diſagreeable flavour.

ACHETA. A name given by the ancient naturaliſts to the large ſpecies of cicada; the nymphs of which they uſed to eat, and eſteemed them delicious food.

ACHIÆNUS. A term by which the ancients denoted a deer or ſtag in the ſecond year of it's age. In the firſt, they gave it the name of nebrus; in the third, it received the appellation of dicrotus; and that of ceraſtes was continued ever after.

ACICULÆ. A term uſed by naturaliſts to expreſs thoſe ſmall ſpikes, or prickles, in the ſhape of needles, with which nature has armed ſeveral quadrupeds, as well as cruſtaceous and teſtaceous animals.

ACITLI. The common Mexican name for the great-creſted diver, a bird common to Europe and America, and more uſually denominated by naturaliſts the lepus-aqueus, or water-hare.

ACO. A name given to a Mediterranean fiſh; called alſo aquo, ſarachus, and ſarachinus.

ACOLIN. A bird of the partridge-kind common in Cuba and Hiſpaniola. It is about the ſize of a ſtarling; it's legs and feet are of a pale greeniſh colour; it's toes are very long; it's breaſt and belly are white; it's beak is yellow, and longiſh; it's head is ſmall; it's ſides are ſpotted with brown; and it's back and tail are of a duſky yellowiſh brown. The tail is very ſhort; and both that and the back have ſome black ſpots, with narrow bars of white. This bird frequents the margins of lakes, where it is ſuppoſed to feed on flies, worms, and other inſects uſually produced in a watery ſoil. It is killed for it's fleſh, and is eſteemed very agreeable food.

ACONTIAS. A ſpecies of ſerpent, called alſo jaculum, or the dart-ſnake, from the manner in which it vibrates it's body. It's motion is the ſwifteſt of any known reptile, and is performed by coiling itſelf upon it's tail, and darting to it's full extent; then, carrying it's tail, as quick as lightning, to the head, coiling and darting again. In this manner it proceeds with extreme rapidity, without ever quitting the ground. It has been generally believed that this ſerpent poſſeſſes the faculty of flying; and, indeed, it is frequently known to dart down from trees on it's prey: but, if we conſider the length and weakneſs of this animal, and the peculiar conformation of the vertebræ, in which all the junctures are formed to give motion, and none to give power, we cannot conceive by what means it can attain the faculty of ſpringing from the ground. It is found in Egypt, Lybia, and the Mediterranean iſlands. It's length is about three feet; it's colour is a milky grey on the back, variegated with ſmall black ſpots, appearing like ſo many eyes; and it's belly is perfectly white. The neck is wholly black, and from that two milk-white ſtreams run all along the back to the tail; and the black ſpots are each ſurrounded with a circle of white.

ACORN. A genus of ſhells, called lepas and balani by Linnæus, of which naturaliſts enumerate only a few ſpecies, or families. The Acorn-ſhell is multivalvular, unequal, and fixed by a ſtem, or ſeſſil; the valves lie parallel to each other, and in a perpendicular poſition, contrary to that of all other valves, which lie horizontally. The incloſed animal performs it's neceſſary functions by an aperture at the top; for the valves, being deſtitute of hinges, never open or ſeparate. It affixes itſelf to other bodies by the bottom, and is never found detached from ſome ſolid body, ſuch as larger ſhells and ſtones.

The Britiſh coaſts furniſh ſix different ſpecies of Acorns, which the ingenious Mr. Pennant diſtinguiſhes by the names of the common, ſulcated, Corniſh, ſtriated, bell, and anatiferous Acorns; ſo called from the variations in their colour and conformation.

The tentacula from this animal being feathered, our credulous anceſtors, both naturaliſts and hiſtorians, conceived the idea that it gave origin to a bird called the barnacle-gooſe. So long did this opinion prevail, that we find, in the Philoſophical Tranſactions of this country, a grave account of it's transformation into a bird; which gave the late Dr. Hill an opportunity, in his diſpute with the Royal Society, of expoſing the credulity of that reſpectable body, and their too great love of the marvellous. As it may be amuſing to inſpect the philoſophy of our progenitors, we ſhall tranſcribe the following ridiculous account from Gerard.

'What our eyes have ſeen, and hands touched, we ſhall declare. There is a ſmall iſland in Lancaſhire, called the Pile of Foulders, wherein are found the broken pieces of old and bruiſed ſhips, ſome whereof have been caſt thither by ſhipwreck; and alſo the trunks and bodies, with the branches, of old and rotten trees, caſt up there likewiſe; whereon is found a certain ſpume, or froth, that in time breedeth unto certain ſhells, in ſhape like thoſe of the muſcle, but ſharper pointed, and of a whitiſh colour; wherein is contained a thing in form like a lace of ſilk, finely woven, as it were, together, of a whitiſh colour; one end whereof is faſtened unto the inſide of the ſhell, even as the fiſh of oyſters and muſcles are; the other end is made faſt unto the belly of a rude maſs, or lump, which in time cometh to the ſhape and form of a bird. When it is perfectly formed, the ſhell gapeth open, and the firſt thing that appeareth is the lace or ſtring; next come the legs of the bird hanging out; and, as it groweth greater, it openeth the ſhell by degrees, till at length it is all come forth, and hangeth only by the bill: in ſhort ſpace after it cometh to full maturity, and falleth into the ſea, where it gathereth feathers, and groweth to a fowl bigger than a mallard, and leſſer than a gooſe; having black legs, and bill or beak, and feathers black and white, ſpotted in ſuch manner as is our magpye, called in ſome places a pie-annet, which the people of Lancaſhire call by no other name than a tree-gooſe; which place aforeſaid, and all thoſe parts adjoining, do ſo much abound therewith, that one of the beſt is bought for threepence. For the truth hereof, if any doubt, may it pleaſe them to repair unto me, and I ſhall ſatisfy them by the teſtimony of good witneſſes.'

ACTINIA. A genus of ſea-animals of the order of the gymnarthria, naturally of a cylindric ſhape, but of a variable figure: the tentacula are very numerous, and arranged in ſeveral ſeries round the

the mouth, which is placed at one extremity of the body, and is furniſhed with crooked teeth. The tentacula are in a continual vibratory motion, and by that means draw ſmall animals into it's mouth for food. The animal is equally thick in all it's parts, and about half an inch in length; the tail is trifurcated, or terminating in three points; the colour is a pale fleſh, except the tentacula, which have a beautiful variety of hues, and form, when open, a radiated angular circumference, like a beautiful flower with a ſmooth polygonal diſc. It lodges in little cavities of rocks, and of the larger ſea-plants of the ſtony kind; and is found on the coaſts of the American iſlands, of various ſpecies, differing from each other in ſhape, ſize, and colour. In the Linnæan ſyſtem, this animal is made a genus of the molluſca order of worms, including five ſpecies: the ſtalky, fulcated, ſtudded, button, and cinque-foil; all which are found on the coaſts of the Britiſh iſles. See ANEMONIES.

ACUS. A long ſlender ſea-fiſh, of which there are two ſpecies, a larger and a ſmaller, common in the Mediterranean. It is called by the Venetian fiſhermen biſcia; that is, the viper-fiſh. The larger ſpecies is often a cubit long, and about the thickneſs of a finger; the ſnout is long, tubular, and only open at the end; the mouth is of a ſtrange figure, opening upwards at the extremity of the ſnout; and the eyes are prominent. From the head to the anus it is of an hexagonal figure, and from the anus to the tail it is ſquare: the anus is placed nearly in the centre of the body, near which is a large longitudinal fiſſure for the eggs of the female. In all theſe reſpects, it bears a ſtrong affinity to the hippocanpus. It has two fins at the gills, and another on the back; each of which is extremely ſmall, and, the laſt in particular, is ſcarce diſcernible, unleſs when the fiſh is in actual motion. The tail is a ſmall ſingle fin; the ſkin is hard and variegated; and the quantity of fleſh is ſo ſmall, that the fiſh is not regarded as worth eating.

ACUS is likewiſe uſed by ſome authors to ſignify the belone, or paphix; in Engliſh, the gar-fiſh; and, by ſome, the horn-fiſh. The two diſtinct kinds underſtood by this indefinite term are diſtinguiſhed by the names of the authors who firſt noticed them; the tobacco-pipe fiſh, or that with the tubular noſe, being called the Acus of Ariſtotle; and the gar-fiſh, or that with the horizontal open mouth, the Acus of Oppian. This laſt is not very different in ſhape from the former; being long and ſlender, with a round back, a flat belly, a very long noſe or ſnout ſharp and pointed, and a flat head. The back is of a greeniſh colour, and the ſides and belly are of a ſilvery white; the head is of a blueiſh green, and an obſcurely dotted purple line runs along the back; the under-jaw is longer than the upper, and both are thick ſet with ſharp teeth. It has only one back fin, and a forked tail.

Bellonius deſcribes another ſpecies of this fiſh, conſiderably larger than the common one, ſcaly, and furniſhed with broader teeth; whereas the common one has either no ſcales, or they are extremely minute. The dotted dorſal line, however, has been affirmed by ſome to be a ſingle row of ſcales, and theſe perſons contend that the fiſh has no other.

ADDER. A venomous reptile of the ſerpent kind, ſometimes confounded with the aſp, but more uſually known by the name of the viper. See VIPER.

The diſtinguiſhing characteriſtics between the adder and the ſnake are, that the former is much ſhorter in proportion to it's bigneſs, eſpecially below the vent; that it is marked on the back with black lines or ſpots, which the ſnake wants; that it's belly is blackiſh, and of one colour, whereas the ſnake is party-coloured, of a pale yellow and blue; that it never attains to the ſize of a ſnake; and, laſtly, that it is viviparous, whereas the ſnake is oviparous.

ADDER, SEA. The Engliſh name of a ſpecies of ſyngnathus, with a round body, deſtitute of tail or pectoral fins.

ADDER, WATER. A name ſometimes applied to the natrix. See NATRIX.

ADEL. A name given by ſome nations to the lavaretus, or albula nobilis. Theſe, indeed, are uſually treated of by naturaliſts as two different kinds of fiſh; but Artedi contends that they are the ſame ſpecies, and diſtinguiſhes them by the name of the coregonus with the upper jaw flat, and longer than the under, and with fourteen rays in the back fin.

ADMIRABLE. A ſpecies of butterfly generally frequenting the great ſtinging nettle, on which the female commonly lays her eggs; in doing which ſhe flies from one nettle to another, depoſiting her eggs ſingly, one on a leaf, and at ſuch diſtances from each other, that ſometimes her ſtore of eggs will be extended over ſeveral fields. Nature probably directs her to this method, as a more certain ſecurity for the preſervation of the ſpecies; and ſo attentive is ſhe to the ſafety of her young brood, that ſhe often ſecretes herſelf among the nettles, in order to examine if they are frequented by ants, or other creatures deſtructive to caterpillars, before ſhe ventures to depoſit a ſingle egg.

No ſooner is the egg hatched, than the young caterpillar, being of a very tender nature, begins to ſeek a place of ſecurity; and to keep itſelf from the injuries of the weather, as well as the ichneumon, of which it ſeems to live in conſtant apprehenſion. It encloſes itſelf in a leaf of the nettle, by drawing it's edges together with the fine ſilken threads it contains; and, being lodged in ſecurity, feeds on that part of the leaf which is next the ſtalk, till having conſumed the greateſt part of the leaf, it ſhifts it's ſkin, and forſakes it's ruined habitation, to go in ſearch of a place proper for a new one. In this manner the caterpillar proceeds, till one leaf is no longer able to contain it, when it creeps up towards the top of the nettle, and ſpins itſelf up within the leaves, after eating the ſtalk almoſt through. Sometimes, indeed, it may be found drawing the tops of two contiguous nettles together; and it often happening that ſome one nettle which may be wanted to compoſe the habitation, is at too great a diſtance, on ſuch occaſions the caterpillar inſtinctively conſumes the ſtalk on the farther ſide, that it may more readily incline to it's purpoſe.

To find this caterpillar, it is only neceſſary to examine ſuch nettles as have their tops bending with their leaves, and withered. This is done by the caterpillar of the Admirable; and, among the dead leaves, it's ſpinning, and probably the chryſalis, may be found, as it ſeldom begins to work till ready for it's transformation, which happens generally about the beginning of Auguſt.

The caterpillars aſſume various colours: ſome appearing of a light yellow, or amber colour; and others almoſt black. The younger caterpillars, however, are black, freckled with ſmall yellow ſpots. When properly fed, the caterpillar generally affixes itſelf to it's ſpinning by means of it's tail, and changes to the chryſalis, though ſometimes it may

may be found hanging openly under a leaf, or any other convenient ſhelter. Why it changes in this naked and expoſed ſtate, contrary to it's uſual practice of concealing itſelf, is not eaſily accounted for; but the moſt probable reaſon is, that the earwigs, which get into it's incloſures in great numbers, oblige it to retire; and, being near the time of it's transformation, it is too feeble to make a freſh coverture, and conſequently remains in an expoſed ſtate.

The chryſalis is of a beautiful pearl colour, covered with a fine bloom repreſenting that on the plum. But the chryſalides which bear this appearance, are only ſuch as are found in the fields; for thoſe produced from caterpillars fed in houſes, are of a dirty brown, though ſometimes embelliſhed with ſmall golden ſpots. The chryſalis ſtate takes up a period of twenty-one days, and then appears the Admirable Fly, ſo denominated from it's beautiful variety of colours. The female is larger than the male, and may be known by an additional white ſpot ſituated in the red part of the ſuperior wings. It frequents ſolitary lanes, and places over-run with brambles, on the bloſſoms of which it continually ſettles. It is extremely quick-ſighted, timid, and ſwift of wing; and, when purſued, generally takes ſhelter in ſome lofty tree, where it remains till it conceives the danger is paſt.

ADMIRABLE, WHITE. This beautiful inſect has very ſeldom been diſcovered in a caterpillar ſtate in this kingdom, though the fly may be caught in the woods, in the latter end of June and the beginning of July. It flies with great rapidity, often ſkimming like a ſwallow, and ſeems to have a peculiar predilection for the leaves of the oak. Sometimes it ſettles on the ground, in ſhady paths of the woods: it is, however, extremely timorous; and, when aware of it's purſuer, darts over the tops of the higheſt trees with inconceivable velocity, or ſettles on the loftieſt branches, from which it is not eaſily diſlodged.

Though, as we have juſt obſerved, this inſect is not often found in a caterpillar ſtate in England, it appears from the accounts of German naturaliſts, that it lays it's eggs on the very tops of the higheſt poplars, where the young are hatched, and remain during the winter in the caterpillar ſtate, ſecuring themſelves by their webs; that in the ſpring they feed again, when awakened by the genial heat of the ſun from their dormant ſtate; and, becoming full fed in the beginning of June, change to the chryſalis; when, towards the end of June, the White Admirable, ſo much eſteemed by aurelians, is produced.

ADMIRAL. A very beautiful and precious ſhell of the voluta kind, of which the curious enumerate four ſpecies: the Grand Admiral, the Vice Admiral, the Orange or Rear Admiral, and the Extra Admiral.

The firſt of theſe is held in ſuch high eſtimation, that a ſingle ſhell has been ſold in Holland for five hundred florins. It's colour is a very elegant and ſhining white enamel, variegated with yellow bands, repreſenting, in ſome meaſure, the colours of the flag of a man of war at ſea, from which fancied reſemblance it obtained it's name. The ſhape is peculiarly curious, and the elegance about the head is almoſt inconceivable, the clavicle being exerted. Along the centre of the large yellow band in this ſhell, runs a beautiful denticulated line, which is it's diſtinguiſhing characteriſtic.

The Vice Admiral is likewiſe a very valuable ſhell; but the conformation of the head is leſs elegant than that of the Grand Admiral; and it's broad band wants the denticulated line which diſtinguiſhes the latter.

The Orange Admiral contains more yellow ſtrize than the others; from which peculiarity it derives it's name.

The Extra Admiral has the ſame form and bands as the former; but theſe bands, running into one another, form a mixed nebulous appearance, which conſiderably varies in different ſhells.

ADONIS. A ſmall fiſh of the anguilliform kind, about ſix inches long, of a cylindric ſhape; and a golden colour intermixed with a greeniſh hue, and ſometimes a reddiſh one. A white ſtraight line runs on each ſide from the gills to the tail; the gills are remarkably ſmall, which has induced ſome ſuperficial obſervers to conclude that it was deſtitute of any; however, from a minute examination, the contrary appears to be the fact. It is remarkable for ſleeping on the ſurface of the waters, and near the ſhores; and Rondeletius affirms, that he has even ſeen it repoſing on the dry rocks.

This fiſh is alſo called exocætus; and Ray ſuſpects it to be the ſame with the exocætus of Bellonius, or the gottorugine.

ADOSCULATION. A term uſed by natural hiſtorians to expreſs a ſpecies of copulation or impregnation by mere external contact between the genitals of the two ſexes without intromiſſion. Several kinds of birds, fiſhes, and particularly ſhell-fiſh, are impregnated by this method of generation.

ÆGLEFINUS. A name given by the generality of authors to the haddock, a well known fiſh, of a middle nature between the cod and the whiting; called by others the onos, or aſinus antiquorum. See HADDOCK.

ÆGOCEPHALUS. The claſſical name of the bird known in England by the appellation of the godwit or ſtone-plover.

ÆHOITULLA. An Eaſt Indian ſerpent, frequently found in the Iſland of Ceylon, of a very long and ſlender form, ſometimes wholly green, and ſometimes variegated green and white. It lives principally among trees and buſhes, and does not appear to be of a very venomous nature.

ÆLQUAPPE. A fiſh of the muſtela kind, the viviparous eelpout, called by ſome muſtela vivipara, aelpute, aelmoder, and aelmutter. It grows to about a foot in length; the ſkin is perfectly ſmooth; the head and back are of a browniſh yellow, marked with blotches of black; the colour of the back becomes paler as it approaches towards the belly, and on the belly is quite whitiſh. The head is ſhaped like an eel, and there are four gills on each ſide; the back-fin reaches the whole length of the body, terminating near the tail; and the belly-fin riſes at the anus, and reaches to the extremity of the fiſh, ending in a fine, ſlender, and ſomewhat reddiſh tail. Beſides theſe, it has two pair of fins: one at the bottom of the gills, which are rather broad; the other under the throat, which are very fine and ſlender. The young of this ſpecies are often found alive in one fiſh to the number of three hundred: theſe are ſometimes upwards of an inch in length, and will live after they are ſeparated from the parent ſtock.

ÆRICA. The claſſical name given by Gaza and others to the common herring.

ÆSALON. A ſpecies of hawk of the long-winged race, called in Engliſh the merlin. It is the ſmalleſt of the hawk-kind, uſed in the diverſion of

of hawking; being only about the ſize of a black-bird. The beak is blue; the eyes are of a hazel colour; a wreath of whitiſh yellow feathers appears behind it's head; the throat is white; and the back and wings are of a duſky blackiſh brown. The larger wing-feathers are black, and marked with brown ſpots; the tail is long, and variegated with tranſverſe ſtreaks of black and whitiſh brown; the breaſt and belly are of a whitiſh brown, variegated with blackiſh brown ſpots; and the legs are long and yellow. It preys on partridges, and every other bird over which it's ſtrength gives it an aſcendancy.

ÆSCH. A name ſometimes given to the grayling or tumbler, a fiſh of the truttaceous kind, called in Latin thymallus.

ÆSCHNA. A ſpecies of water-fly, of an aſh-colour, with four wings, and a long body hairy near the tail.

ÆSCULAPII ANGUIS, or SNAKE OF ÆSCULAPIUS. A harmleſs ſpecies of ſerpent, common in Spain, Italy, and other warm countries. In Italy it is ſuffered to enter the houſes, and frequently aſcends the bed where people repoſe. This animal is of an oblong ſhape, and about an ell in length. It is of a yelloviſh colour, except on the back, where it is of a browniſh hue. Both jaws are armed with a number of very ſharp teeth; and on the neck appear two ſmall eminences, with an empty ſpace between them.

ÆTHIA. An ancient name given to one of the web-footed ſpecies of fowls which the moderns ſuppoſe to be the utamania of Crete, or the common auk or razor-bill.

AFDELLES. A Cretan name for the fiſh called at Rome lonzellina and zigurella. It appears to be the julis of antiquity; and, according to the Artedian zoology, is a ſpecies of the labrus. Artedi diſtinguiſhes it from the others by the name of the palmar labrus with variegated ſides and two large teeth in the ſuperior jaw.

AGNOS. A name given by Athenæus, and many other Greek writers, to the fiſh called callionymus, or uranoſcopus. It is a ſpecies of the trachinus; and is diſtinguiſhed by Artedi from the reſt of that genus, by the name of the trachinus with a great number of beards growing from the lower-jaw.

AGONUS. A name uſed by the generality of authors to expreſs the fiſh called by ſome ſarachus, and by others either chaleis or ſardella. This fiſh in many reſpects reſembles the alauſa or ſhad, called the mother of herrings, but is conſiderably ſmaller, never arriving at more than a foot in length; and is always ill-conditioned in ſpring, but fat and plump in autumn. The diſtinctions, however, between it and the alauſa, if real, are ſo very trifling, that the penetrating Ray, and many of the moſt accurate naturaliſts, ſuſpect it to be the ſame fiſh in a different ſtate.

AGOUTI. This animal ſeems to be a middle ſpecies between the hare and the marmot, and bears ſome rude reſemblance to the hare and the rabbit in it's form and manner of living, though ſufficiently different from both to require a particular deſcription. It is found in great abundance throughout South America, and has been by ſome denominated the rabbit of that continent; but though, in many reſpects, it bears a ſtrong affinity to the rabbit, it varies from it very eſſentially, and is moſt unqueſtionably an animal peculiar to the new world. The Agouti is about the ſize of a rabbit, and has a head very much like that animal, except that the ears are conſiderably ſhorter. It alſo reſembles the rabbit in the arched form of it's back; in the hind-legs, which are longer than the fore; and in having four great cutting teeth, two above, and two below. The Agouti likewiſe differs from the rabbit in the nature of it's hair, which is not ſo ſoft and downy as the hair of that animal, but hard and briſtly, like that of a young pig, and of a reddiſh brown hue. It farther differs from the rabbit in the tail, which is ſhorter, and entirely deſtitute of hair. And, laſtly, it differs from that animal in the number of it's toes; having but three on the hind-feet, whereas the rabbit has five. All theſe diſtinctions, however, do not materially interfere with it's general conformation, which reſembles that of the rabbit; and hence moſt travellers have called it by that name.

But the Agouti varies more eſſentially from the rabbit in it's habitude and diſpoſition, than in it's form. As it has the external covering of a hog, ſo alſo it has it's voracious appetite. It eats indiſcriminately of, as well as takes pleaſure in gnawing and defacing, every thing which comes in it's way; and, when ſatiated, conceals the remainder, like the dog and fox, for ſome future occaſion. When irritated, the hair of it's back ſtands erect; and, like the rabbit, it ſtrikes the ground very violently with it's hind-feet. It does not dig a hole in the ground, but burrows in the holes of trees; and it's ordinary food conſiſts of the roots peculiar to it's native country, ſuch as potatoes and yams, with thoſe fruits which in Autumn fall from the trees. It uſes it's fore-paws, like the ſquirrel, to convey it's food to it's mouth: and, as it's hind-feet are longeſt, it runs very ſwiftly on plain ground, or up-hill; but, on a deſcent, it is in danger of falling. It's ſight is excellent, and it's hearing inferior to that of no other animal; and, whenever it is whiſtled to, it ſtops to hearken. The fleſh, when fat and well fed, is tolerable food, though it has a peculiar taſte, and is a little tough. Buffon informs us, that the French dreſs it in the ſame way as they do a ſucking-pig; but the Engliſh ſerve it up with a pudding in it's belly, like a hare.

Whenever the Agouti is entangled in a ſugar-ground where the canes ſtand thick, it is eaſily overtaken by the dogs; for as it is embarraſſed by every ſtep it takes, a man may eaſily catch it without any other aſſiſtance. When in the open country, it runs with amazing ſpeed before the dogs, till it gains it's retreat, within which it continues to hide itſelf till it is diſlodged, and this is uſually performed with extreme difficulty. Indeed, nothing but filling the hole with ſmoke can force it out of it's ſhelter; for which purpoſe the hunter burns faggots, or ſtraw, at the entrance, and conducts the ſmoke into it in ſuch a manner as to fill the whole aperture. While this is performing, the poor animal ſeems ſenſible of it's danger; and, by the moſt plaintive cries, expreſſes it's terror: however, it ſeldom quits it's hole till the laſt extremity. At length, half ſuffocated, it iſſues out, and truſts once more to it's ſpeed for protection; but when ſtill purſued by the dogs, and incapable of making good it's retreat, it turns on the hunters; and, with it's hair briſtling like a hog, and ſtanding on it's hind-feet, it defends itſelf to the laſt extremity with an obſtinacy ſcarcely to be expected from ſuch a feeble animal. Sometimes it will bite thoſe who attempt to catch it, and wherever it fixes it's teeth it is ſure to take out the piece,

The cry of the Agouti, when diſturbed or provoked, reſembles that of a ſucking-pig. If taken young, it is eaſily tamed, continues very tractable, and ſeldom reverts to it's original wildneſs. In it's ſavage ſtate, it uſually inhabits the woods, the moſt unfrequented parts of which are choſen by the female for the purpoſe of bringing forth her young; where ſhe prepares a bed of leaves and dry graſs, and generally produces two at a time. She breeds twice or thrice a year, carrying her young from one place to another, after the manner of the feline tribe. When they are three days old, ſhe commonly lodges them in the hollow of a tree: where ſhe ſuckles them but a ſhort time, as they are ſoon capable of providing for themſelves; from which we may naturally conclude that the Agouti is not very long-lived.

AGRIÆ. An order of quadrupeds deſtitute of teeth, but furniſhed with very long cylindric tongues which ſupply that defect. Of this order there are only two diſtinct genera; the myrmecophaga, and the manis.

AGUAPECACA. The name of a Brazilian bird of the moor-hen kind. It grows to the ſize of a pigeon, is very long-legged, and furniſhed with a beak like that of the gallinaceous tribe. It's back, and the ſuperior parts of it's wings, are brown; and the neck, breaſt, and belly, are of an iron-grey. In the extremity of each wing it has a ſharp horn, or prickle, with which it defends itſelf from the injuries of it's feathered companions.

AHANIGER. A name given by ſome authors to the fiſh called by naturaliſts acus vulgaris, and by others the gar-fiſh. The conformation of this fiſh, which is very long and ſlender, has cauſed it to be confounded with the ſyngnathus, or tobacco-pipe fiſh; but, when accurately examined, it appears very different, that being a true ſpecies of the ſyngnathus, and this of the eſox or pike. See GAR-FISH.

AHICCYATIL. An American ſerpent, approaching to the nature of the hæmorrhous and rattle-ſnake; but exceeding the former in magnitude, and being deſtitute of the rattle of the latter. It's poiſon, however, is as ſubtle as that of any ſpecies of the ſerpent race; though capable of being expelled by the uſual antidotes.

AIAIA. A Brazilian bird of the platea, or ſpoonbill kind, called by the Portugueſe colhorado. In the ſhape of it's body, and the formation of it's bill, it exactly reſembles the European ſpoonbill. It is of a pale, but very bright and gloſſy fleſh-colour, on the back and wings; while the other parts of the body are of a beautifully white. It is commonly ſeen near the Brazilian rivers; and is killed for the ſake of it's fleſh, which is very palatable.

AICUROUS. A Brazilian parrot, of ſuperior magnitude to the generality of the ſpecies, and one of the moſt docile of that beautiful tribe. The head of this bird is variegated with yellow, red, and violet colours; the body is green; the tips of the wings are red; and the tail-feathers are long and yellow. This bird is too delicate to exiſt under a leſs favourable ſky than that of it's nativity, and is therefore ſeldom imported into Europe; though it's amazing beauty and ſagacity would render it a valuable addition to the fineſt aviary. Cluſius furniſhes us with an inſtance of it's prodigious underſtanding in the following narration.

'A certain Brazilian woman,' ſays he, 'who lived in a village two miles diſtant from that in which we reſided, had a parrot of this kind, which was the wonder of the place. It ſeemed endued with ſuch underſtanding, as to diſcern and comprehend whatever ſhe ſaid to it. As we ſometimes uſed to paſs by that woman's houſe, ſhe uſed to call upon us to ſtop; promiſing, if we gave her a comb, or a looking-glaſs, that ſhe would make her parrot ſing and dance to entertain us. If we agreed to her requeſt, as ſoon as ſhe had pronounced ſome words to the bird, it began not only to leap and ſkip upon the perch on which it ſtood, but alſo to talk and to whiſtle, and imitate the ſhouts and exclamations of the Brazilians when they prepare for battle. In ſhort, when the woman was pleaſed to make it ſing, it ſung; to dance, it danced. But if, contrary to our promiſe, we refuſed to give the woman the little preſent agreed on, the parrot ſeemed to ſympathize in her reſentment, and was ſilent and immoveable; neither could we, by any means, provoke it to move either foot or tongue.'

AIGRETTA. A name uſed by ſome naturaliſts to expreſs a diſtinct ſpecies of heron, but which ſeems to be no other than a ſynonym of the gara giovane, or ardea alba minor, the ſmall white heron.

AIPIMIXIRA. An American fiſh, more generally known by the name of pudiano. This fiſh, which is very ſmall, and ſhaped like the perch, has a purple back, with a yellow belly and ſides.

AJURU CATINGA. A Brazilian parrot of the ſize of a common pullet, entirely covered with plumage of the moſt vivid green. It's eyes are of a fiery red, and the ſkinny circle around them is white; of which colour likewiſe are it's beak and legs.

AJURU CURAU. A Brazilian ſpecies of parrot, of the ſize and ſhape of the common green parrot. Of this ſpecies there are two kinds. The firſt ſpecies, which is extremely beautiful, has a blue crown; the throat and ſides of the head are of a fine yellow; the reſt of the body is of a lively green; the long-winged plumes are partly black, and partly yellow, having their tips variegated with blue and green; and the tail is edged with red, black, and blue. The other ſpecies has the ſame colours, but differently diſpoſed. It's head is yellow, with a whitiſh caſt; the throat, and ſides of the head about the eyes, are of a vivid yellow; and near the head there is a ſea-green ſpot.

Excluſive of the above, there is alſo another ſpecies, which poſſeſſes all the colours of the firſt, but with an admixture of black about the head, a yellow ſpot on the crown, another of the ſame colour below the eyes, and a blue one under the throat.

AJURU PARA. A Brazilian ſpecies of parrot of a ſmall ſize. It's whole plumage is of a moſt beautiful green colour; and it's legs, beak, and circlets of the eyes, are of the pureſt white.

ALAUDA. A genus of the order of paſeris, and claſs of aves, in the Linnæan ſyſtem. See LARK.

ALBARDEOLA. A name given by many authors to the platea or ſpoonbill.

ALBATROSS. One of the largeſt and moſt formidable birds of Africa and America, abounding particularly about the Cape of Good Hope, Cape Horn, and ſome other places. Edwards, the ingenious ornithologiſt, thus deſcribes the figure of the Albatroſs. The body is rather larger than that of a pelican; and it's wings when extended, are ten feet from tip to tip. The bill, which is ſix inches long, is yellowiſh, and terminates in a crooked point. The top of the head is of a bright brown; the back is of a dirty deep ſpotted brown; the belly

belly is white; and the toes, which are webbed, are of a fleſh-colour.

Such are the leading traits in the figure of this famous bird: but theſe alone give us a very imperfect inſight into it's hiſtory and qualities; we ſhall therefore inveſtigate it's particular habits, which render it a ſubject of ſome importance to the ſcience.

The Albatroſs is one of the moſt fierce and formidable of the aquatic tribe; not only preying on fiſh, but likewiſe on ſuch ſmall water-fowl as it can take by ſurprize. It preys, after the manner of all the gull tribe, on the wing; and chiefly purſues the flying-fiſh, when driven from the ocean by the dolphin. In our northern ſeas, one dreary expanſe, ruffled by winds, and ſeemingly abandoned by every claſs of animated nature, preſents itſelf; but in the tropical ſeas, and the diſtant ſouthern latitudes, the ſcene is filled with birds and fiſhes purſuing and purſued. Every different ſpecies of the gull-kind is there ſeen hovering on the wing, and at an immenſe diſtance from ſhore. The flying-fiſh is continually riſing to elude it's enemies in the deep; but, in eſcaping one danger, it generally falls into another equally fatal. Juſt as it riſes, the dolphin is ſeen to dart after it, though generally in vain; but the gull has more frequent ſucceſs, and often catches it at it's riſe; while the Albatroſs, purſuing the gull, compels it to relinquiſh it's prey. Thus the whole horizon preſents one general ſcene of rapacity and cunning, of ſtratagem and evaſion.

'As the Albatroſs,' ſays Wicquefort, 'except when it breeds, lives entirely remote from land, ſo it is often ſeen, as it ſhould ſeem, repoſing in the air. At night when it is preſſed by ſlumber, it riſes into the clouds, as high as it can; where, putting it's head under one wing, and beating the air with the other, it ſeems to enjoy it's eaſe. After ſome time, however, the weight of it's body, only thus half ſupported, brings it down; and it is then ſeen deſcending, with a pretty accelerated motion, towards the ſurface of the deep: on this it again exerts itſelf to riſe; and thus, alternately, aſcends and deſcends at it's eaſe. But, during theſe uncommon ſlumbering flights, it frequently loſes it's equilibrium; and, falling on the deck of ſome ſhip, becomes an eaſy prey to the mariners.'

How far this account may correſpond with ſimple truth, is difficult to determine; but certain it is, that few birds float on the air with more facility than the Albatroſs, or are capable of ſupporting themſelves a longer time in that element. It ſeems unconſcious of the exceſſes of fatigue; keeps hovering night and day on the wing, and always appears as if emaciated with hunger.

But though this bird may juſtly be deemed one of the moſt dreaded tyrants of the deep, it does not indiſcriminately prey on every animal, and entirely relinquiſh any aſſociation with other creatures. Between the penquin and the Albatroſs there ſeems to be a peculiar affection: they are always ſeen to chuſe the ſame breeding places; which are generally diſtant unfrequented iſlands, in which the ground ſlopes downward to the ſea, the penquin being neither formed for flying nor climbing. In ſuch ſituations, their neſts are contiguous, as if they ſtood in need of mutual aſſiſtance and protection. The union preſerved between theſe birds, and the regularity with which they build their neſts, are indeed aſtoniſhing. On the Falkland iſlands, thoſe bleak and deſolate ſpots, where theſe birds had long continued undiſturbed; and in no reſpect dreaded the encroachments of men, they ſeemed to make their habitations as convenient as if they expected them to be permanent: they built them with an amazing degree of uniformity, and their ſociety reſembled a regular plantation. In the middle, the Albatroſs raiſed it's neſt, on heath-ſticks and long-graſs, about two feet from the ſurface of the ground; and round this the penquins conſtructed their inferior abodes, by making holes in the earth, the general proportion they obſerved being that of eight penquins round one Albatroſs. But as theſe iſlands are now more frequented than formerly, the penquin and the Albatroſs have forſaken them, and ſought ſome more obſcure retreat: a ſtriking confirmation of Buffon's judicious remark, that the preſence of man not only deſtroys the ſociety of meaner animals, but likewiſe ſerves to extinguiſh their inſtincts.

ALBELEN. A fiſh of the truttaceous kind, called alſo albula, ſtrongly reſembling the ferra. It is caught in the German and other lakes, and commonly weighs from five to ſix pounds, though ſometimes it has been found to weigh twelve. The colour of the Albelen is a fine ſilvery white, with ſome very pale ſtriæ.

ALBORO. A name by which the erythrinus, a ſmall red fiſh caught in the Mediterranean, is commonly known in the Italian markets.

ALBULA. A genus of fiſhes of the truttaceous kind, diſtinguiſhed by their being deſtitute of teeth.

ALBULA INDICA. A ſmall fiſh reſembling a herring, caught on the oriental ſhores, and called by the Dutch the wit-fiſh.

ALBULA NOBILIS. The claſſical name of one of the truttaceous ſpecies of fiſh caught in the German lakes, and in thoſe of various other countries.

ALBURNUS. A freſh-water fiſh, commonly known in England by the name of the bleak. It is frequently caught in the Britiſh rivers, as well as in thoſe of ſome other European countries, and is eſteemed agreeable food. It is a ſpecies of the cyprinus of Linnæus; and is in the greateſt perfection during the month of September. See BLEAK.

ALBURNUS LACUSTRIS. A name erroneouſly given by ſome naturaliſts to the ballerus of the ancients, or the pallerus and pleyſta of the moderns.

ALBUS PISCIS. The white-fiſh; a name by which Salvian has called the capito lacuſtus; and which ſeems to be the ſame with the blue-chub; or, as it is more frequently called, the gontling. See GONTLING.

ALCEDO. A genus of birds belonging to the order of picæ, and comprehending fifteen ſpecies. Their diſtinguiſhing characteriſtics are, that the beak is triangular, thick, ſtraight, and long; the tongue is ſhort, fleſhy, ſmooth, and acute; and the feet are peculiarly formed for walking.

ALCEDO VOCALIS. A name by which Bellonius, Aldrovandus, and ſome other authors, have called the red ſparrow.

ALEC. A name applied by Gaza, in his commentaries on Ariſtotle, to the fiſh called by that author mainis, and by Ovid monerela. It ſeems to be of the ſparus kind.

ALIARBUCHA. The Arabian name for a large ſpecies of rat common in that country; and which is reckoned pretty ſalubrious food, according

ing to Bochart, who conjectures it to be the ſame as the ſchaphanmen tioned in Leviticus xi. 5. and there pronounced unclean.

ALKA. See AUK.

ALKUSSA. A Swediſh name for a fiſh called alſo by the ſame people lake. It is a ſpecies of the ſilurus; and Artedi diſtinguiſhes it by the name of the ſilurus with only one cirrus or beard under the chin; whereas the common ſilurus, which is the glanus of the ancients, has four beards.

ALLELOPHAGI. A term uſed by ſome naturaliſts to expreſs a peculiar genus of flies which feed on one another. They are thus called, to diſtinguiſh them from another claſs ſtiled the heterophagi, from their feeding on different ſubſtances, and not on each other.

ALLIGATOR. A very formidable and ferocious animal, generally confounded with the crocodile; with which, indeed, it agrees in every eſſential property. This animal, which is placed at a happy diſtance from the more populous regions of Europe is only formidable in thoſe countries where there are but few inhabitants. In the more cultivated parts of the earth, the large and ferocious tribes of animals are ſeldom ſeen; where their appearance would rouze a whole country at once to oppoſe their force, probably at the expence of many lives. Hence the crocodile, which was once ſo terrible along the banks of the Nile, is now far leſs common than in ancient times. The arts of mankind, which were naturally firſt applied for the means of preſervation, have in a great meaſure triumphed over this formidable enemy; and though it ſometimes makes it appearance in Egypt, it is comparatively feeble, and diveſted of it's ferocity. To ſee this animal in all it's native terrors, grown to a ſurprizing magnitude, propagated in numbers, and committing acts of perpetual devaſtation; it is neceſſary to ſearch the uninhabited regions of Africa and America, to trace thoſe prodigious rivers which devolve their ſtreams through deſolate and extenſive realms, where the arts of civilization have never penetrated, where force alone conſtitutes diſtinction, and the ſavages of nature exert their ſtrength with confidence, becauſe with ſecurity. A conſiderable way up the River of the Amazons, the Niger, or the Nile, theſe animals are numerous and terrible, being frequently from eighteen to twenty-five feet in length, and ſometimes lying as cloſe together as a raft of timber on the Thames; where they indolently baſk on the ſurface, regardleſs of the approach of enemies; ſince, from repeated trials of their power, they have found none whom they were unable to conquer.

We have before hinted, that the crocodile, properly ſo called, and the cayman or Alligator, are nearly the ſame. Travellers, indeed, rather than nature, have made a diſtinction between them; for, in their general appearance, nature, and conformation, they are entirely the ſame. The uſual diſtinctions, however, between the crocodile and Alligator, are the following. The body of the crocodile is more ſlender than that of the Alligator; it's ſnout running off tapering from the forehead, like that of a greyhound, while the Alligator's is indented like the noſe of a lap-dog. The crocodile has a much wider ſwallow, and is aſh-coloured; the Alligator is black, varied with white, and generally deemed leſs miſchievous. Theſe diſtinctions, however, are very ſlight, and can only be regarded as minute variations, which the difference of ſoil and climate may effect in the ſame ſpecies. The common length of the Alligator is about eighteen or twenty feet; however, ſome have been found to meaſure thirty feet from the tip of the ſnout to the end of the tail. The Jeſuits at Siam diſſected one of the common dimenſions; and, as the deſcription given both of it's external appearance, and internal conformation, is probably the moſt accurate of any to be met with, we ſhall take the liberty to ſubjoin it.

This animal, it appears, was eighteen feet and a half, French meaſure, in length; of which the tail was no leſs than five feet and a half, and the head and neck about two feet and a half long. The fore-legs had the ſame parts and form as the arms of a man, both internally and externally. The hands, if they may be ſo called, had five fingers; the two laſt of which were deſtitute of nails, and terminated conically. The hinder-legs, including the thighs and paws, were two feet two inches long. The paws, from the joints to the extremities of the longeſt claws, were above nine inches long: they were divided into four toes, of which three were armed with large claws, the longeſt of which was an inch an half; and theſe toes were united by membranes like thoſe of web-footed fowls, but of a much ſtronger ſubſtance. The head was long, and had a little riſing at the top; but the reſt of it was flat, and eſpecially towards the extremity of the jaws; and it was covered by a ſkin which adhered firmly to the ſcull and jaws. The ſcull was rough, and indented in ſeveral places; and about the centre of the forehead were two bony creſts two inches high. The ſcull between theſe two creſts was muſquet proof; for, on trial, a ball marked it but ſlightly. The eye was very ſmall in proportion to the reſt of the body; and was ſo placed within it's orbit, that the exterior part, when the lid was ſhut, was only an inch long, and the line ran parallel to the opening of the jaws. It was protected by a double lid, one within and another without: that within reſembling the nictitating membrane in birds, was folded in the great corner of the eye, and had a motion towards the tail; but being tranſparent, it guarded the eye without interrupting the ſight. The iris was very large in proportion to the globe of the eye, and of a yellowiſh grey colour. Above the eye was placed the ear, which opened downwards as if by a kind of ſpring, by means of a ſolid, thick, cartilaginous ſubſtance. The noſe was placed in the middle of the upper-jaw, near an inch from it's extremity, and was perfectly round and flat, being near two inches in diameter, of a black, ſoft, ſpongy ſubſtance, not very diſſimilar to the noſe of a dog; and the jaws ſeemed to be locked one within another. Nothing can be farther from the truth, than the generally received opinion, that the lower-jaw is incapable of motion: it moves like the under-jaw in all other animals; while the upper is fixed to the ſcull, and abſolutely immoveable. This animal had twenty-ſeven cutting teeth in the upper-jaw, and fifteen in the lower, with ſeveral interſtices between them; they were thick at the root, but ſharp towards the point, being all of different ſizes, except ten large hooked ones, ſix of which were in the lower-jaw, and four in the upper. The mouth was fifteen inches long; and, where broadeſt, eight and a half: the diſtance between the two jaws, when fully extended, being fifteen inches and a half; a ſpace wide enough to admit the entire body of a man.

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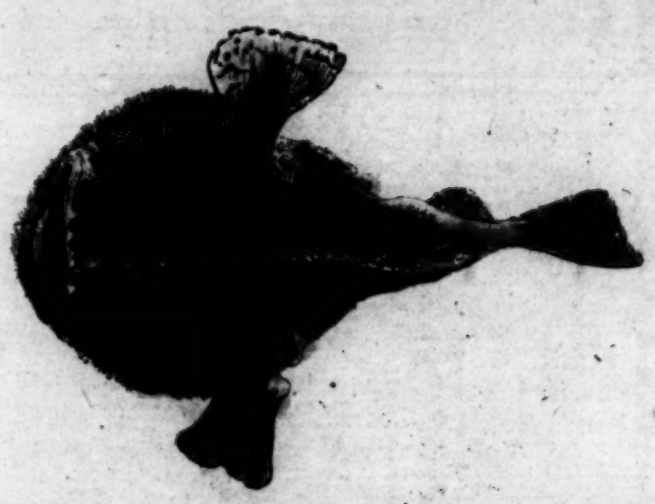

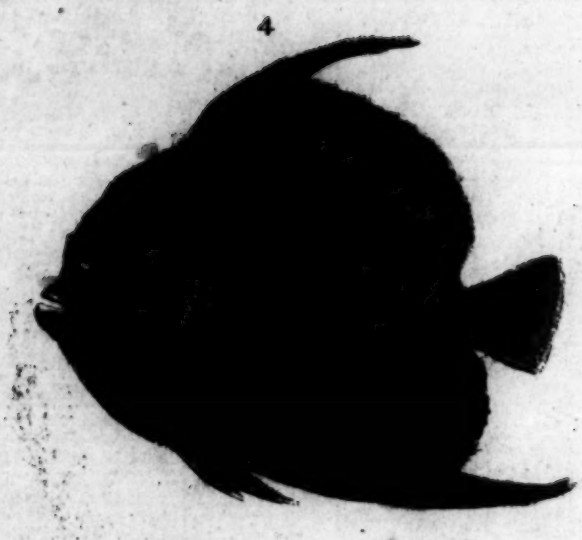

1. ALLIGATOR. 2. AMADAVADE. 3. ANCHOVY 4. ANGEL FISH. 5. COMMON ANGLER.

6. ANGLE SHADES. 7. ANOMIA.

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The colour of the body was of a dark brown on the upper part, and of a whitiſh citron below, with large ſpots of both theſe colours on the ſides. The ſhoulders, to the very extremity of the tail, were covered with fifty-two large ſquare ſcales diſpoſed like parallel girdles; but, towards the tail, the diſtance between theſe circles increaſed. The creature was not only covered with theſe, but alſo with a coat of armour; which, however, was not proof againſt a muſquet-ball, as had been generally believed: yet it muſt be confeſſed, that the attitude in which the animal was placed might contribute to render it more vulnerable; for, probably, had the ball ſtruck obliquely againſt the ſhell, it would have turned off. Thoſe parts of the girdles which were beneath the belly had a whitiſh hue, and were compoſed of ſcales of various ſhapes, but not ſo hard as thoſe on the back.

With regard to the internal conformation of the animal, the gullet was large in proportion to the mouth; and a ball of wood as large as a man's head was paſſed up and down with facility. The guts were comparatively ſhort, not being ſo long as the creature's body. The tongue, which ſome naturaliſts have falſely aſſerted this animal was not poſſeſſed of, conſiſted of a thick, ſpongy, ſoft fleſh, ſtrongly connected with the inferior jaw. The heart was about the ſize of a calf's, and of a bright red colour, the blood paſſing as well through the veins to the aorta as into the lungs. There was no bladder; but the kidneys were furniſhed with a duct to the anus, by which the urine was diſcharged. The back-bone was compoſed of ſixty-two joints; which, though very cloſely united, had ſufficient play to enable the animal to bend like a bow to the right and left; ſo that what we have been told of eſcaping the creature's voracious jaws, by declining from the right line, and of the animal's not being able to wheel about readily after it's prey, ſeems to be entirely fabulous. On the contrary, it is probable, that the Alligator can turn with the utmoſt facility; for the joints of it's back are not leſs pliant than thoſe of other animals, which we know, by experience, can wheel about very nimbly when they pleaſe.

Such is the genuine account of the figure and conformation of this dreaded animal, which depopulates countries, and renders the moſt beautiful rivers dangerous, and even deſerted. It has been ſeen in ſome places for hours, and even days, baſking in the ſun, and apparently motionleſs; ſo that the unwary traveller might eaſily miſtake it for the trunk of a tree covered with a rough and dry bark: but this miſtake would probably be attended with the moſt fatal conſequences, if not timely diſcovered; for the ſeemingly torpid animal, on the near approach of any living creature, inſtantly darts on it with inconceivable ſwiftneſs, and precipitates it to the bottom of the river. During inundations, this unwelcome viſitant ſometimes enters a cottage, and ſeizes the firſt animal it ſees; nor are inſtances very unfrequent of it's having dragged a man out of a canoe, in the view of his companions, who vainly exerted their endeavours to ſave him.

The Alligator is prodigiouſly ſtrong; and it's arms, both offenſive and defenſive, are entirely irreſiſtible. The ſhortneſs of it's legs; the conformation of the back-bone; the muſcles of the fore and hinder legs; and, in ſhort, it's whole frame; are calculated for amazing force. It's teeth are ſharp, numerous, and formidable; it's claws are long, and tenacious; but it's principal inſtrument of deſtruction is it's tail, with a ſingle blow of which it is capable of overturning a common canoe. It's proper element is the water, and there it is by far the moſt deſtructive; nevertheleſs, it is likewiſe very terrible by land: it ſeldom, however, unleſs when preſſed by hunger, or with a view of depoſiting it's eggs, quits it's native element. It uſually floats along the ſurface, and ſeizes whatever animals come within it's reach; but, this method failing, it is then compelled to venture near the ſhore, where it conceals itſelf among the ſedges, in expectation of ſome land animal, the dog, the bull, the tiger, or even man himſelf, coming to drink. As the devoted victim approaches, nothing of the inſidious deſtroyer is to be ſeen; nor is the retreat of the former often meditated till it is too late. The voracious animal inſtantly ſprings on it's prey, with much more agility than might reaſonably be expected from ſuch an unwieldy creature; and, having ſecured it with it's teeth and claws, inſtantly plunges into the water, and drags it to the bottom, where it is devoured at it's leiſure. Sometimes, however, the animal which the Alligator has thus ſurprized and ſeized, eſcapes from it's graſp in a wounded ſtate: in that caſe the tyrant purſues it with all it's might, and often ſeizes it a ſecond time; for, though heavy to external appearance, the Alligator runs with amazing celerity. It often ventures half a mile from the bank of the river; and, having regained it's prey, returns with it to the river-ſide, where it feaſts in perfect ſecurity.

In it's depredations along the banks, it ſometimes happens that the Alligator ſeizes on an animal as formidable as itſelf, and meets with a deſperate reſiſtance. The tiger and the Alligator, in particular, have frequent conteſts. A parching thirſt, with which all animals of the tiger kind are continually affected, keeps them in the vicinity of great rivers, whither they very frequently deſcend to drink. On theſe occaſions they ſometimes meet with the Alligator; and, the inſtant they find themſelves aſſaulted, they turn about with prodigious agility, and force their claws into the eyes of the aſſailant, who immediately plunges with it's fierce antagoniſt into the river, where the ſtruggle continues till the tiger ſubmits to a watery death.

In this manner the Alligator ſeizes and deſtroys all animals, and is therefore equally dreaded by all. Man alone, who can unite reaſon with ſtrength, ſeems capable of combating this animal with ſucceſs. Labat aſſures us, that a negro, with no other weapon than a knife in his right-hand, and a cow's hide wrapped round his left, will boldly venture to attack this animal, even in it's own element. Whenever he approaches the Alligator, he preſents his left-arm with it's contents, which the animal greedily attempts to ſwallow; but the hide ſticking in it's throat, the negro takes that opportunity of giving it ſeveral ſtabs under the lower-jaw with his knife; and the water ruſhing in at it's mouth, which is held open involuntarily, the creature is ſoon ſwelled to ſuch an enormous ſize, that it's animal functions are entirely ſuſpended.

In Siam, Alligators, or crocodiles, (which terms may be uſed indiſcriminately) are frequently caught by the natives. In that empire, where the largeſt as well as moſt formidable animals abound, the inhabitants ſeem particularly fond of ſignalizing their bravery by deſtroying them. They are extremely ſucceſsful in taming the elephant; nor are

they at all loſe fortunete in their attacks on the Alligator. In order to catch that animal, they throw three or four ſtrong nets acroſs ſome river, at proper diſtances from one another; ſo that if the Alligator breaks through the firſt, it may poſſibly be entangled by one of the next. When it firſt feels itſelf entangled in the net, it exerts it's tail, the grand inſtrument of it's ſtrength, with it's utmoſt force; but, after many unavailing ſtruggles, it's force is at laſt exhauſted. The natives then approach their captive in boats, and continue to pierce it with ſharp weapons in the moſt tender parts, till it becomes enfeebled through loſs of blood. When it's motion ſeems wholly to ceaſe, they begin to tie up it's mouth with a cord; and to faſten it's head to it's tail, by bending the body like a bow. However, they do not then conſider themſelves as perfectly ſecure from it's fury; and, for their greater ſafety, they tie all it's feet to the top of the back. Theſe precautions are eſſentially neceſſary; for, were they omitted, the animal would in general ſoon recover ſtrength enough amply to revenge the injury it had received.

The Alligator, when thus ſubdued by the taming arts of man, or bred up from it's infancy, is often uſed for the diverſion and entertainment of the grandees of the eaſt. It is ſometimes managed like a horſe; and, a curb being put into it's mouth, it is obliged to ſubmit to the pleaſure of it's rider; and, though awkwardly formed for a beaſt of burden, it proceeds with a degree of ſwiftneſs not much inferior to that of ſome of our own leſs unwieldy animals.

The Alligator is frequently caught in the African rivers, by the natives, after the ſame manner as the ſhark by Europeans. They ſet out on theſe expeditions in large boats; and, affixing a piece of beef to a hook, with a ſtrong line, the animal no ſooner ſeizes and ſwallows the bait, than it is drawn along, floundering and ſtruggling, till quite exhauſted. It is then pierced in the tendereſt parts of the belly; and, after having received a ſufficient number of wounds, the creature is dragged aſhore.

In other parts of the world, as well as in Siam, the Alligator forms an object of ſavage grandeur near the regal habitations. Philips informs us, that at Sabi, on the Slave coaſt, there are two ponds near the royal palace, in which crocodiles are bred in the ſame manner as carp in Europe.

Hitherto we have been deſcribing the Alligator of deſart regions, or climes at beſt but little explored, where native liberty ſublimes it's rage, and every thing endued with life is obnoxious to it's rapacity; but in Egypt, and in other countries long peopled, where the inhabitants have received ſome degree of civilization, and the rivers are well frequented, this animal is ſolitary and timid. So far from venturing to attack the human ſpecies with unprovoked inſolence, it ſinks at the approach of man, with the utmoſt precipitation, and declines the conteſt, as if ſenſible of his ſuperior force.

Through the whole order of irrational animals, a contempt for mankind prevails, till they have experienced his irreſiſtible powers. The lion and the tiger among beaſts, the whale among fiſhes, and the albatroſs and the penquin among birds, at firſt encounter man without dread or apprehenſion; but no ſooner do they feel his power, than they acknowledge his ſuperiority, and ſeek for ſhelter in the deepeſt receſſes of nature. This may account for the various and contradictory accounts which travellers at different periods have given us of the crocodile and the Alligator: ſome depicting them as harmleſs and timid; as ever avoiding the ſight of man, and preying only on fiſhes; while others rank them among the deſtroyers of nature, aſcribe prodigious ſtrength and malignity to them, and repreſent them as the inveterate enemies of the human race, whoſe fleſh they prefer to any other. Different, however, as theſe accounts are, they are both equally true: for, wherever the Alligator has long reigned unmoleſted and ſecure, it is there ſavage, bold, and dangerous, and wherever it has been harraſſed by mankind, it's retreats invaded, and it's companions deſtroyed, there it becomes timorous, and forgets it's native rage. Indeed, in ſome countries, this animal, inſtead of being formidable, is not only inoffenſive, but even cheriſhed and admired. In the River San Domingo, the Alligators are the moſt harmleſs creatures in nature; the children play with them, ride upon their backs, and even beat them, without receiving the ſmalleſt injury.

The muſky ſmell of theſe animals may probably render them grateful to the ſavages of that part of Africa; and, indeed, they are often known to cut off the parts of the Alligator which contain the muſk, and to wear them about their perſons as the choiceſt perfume. Travellers are not agreed where theſe muſk-bags are ſituated; ſome placing them in the ears, and others in the parts of generation: the moſt probable opinion is, that this muſky ſubſtance is contained in the glands of the arms and legs. But from whatſoever part of the body this odour proceeds, it is very ſtrong and powerful, tincturing the fleſh of the whole body of the animal with it's taſte and ſmell. The Alligator's fleſh, at beſt, is but very indifferent food; and, unleſs the muſk-bags are ſeparated from it, is almoſt intolerable. Even the negroes themſelves can ſcarcely digeſt the fleſh, but the egg is by them eſteem a moſt delicious morſel.

Among the moſt ſavage nations there is always ſome degree of epicuriſm to be met with; and thoſe who poſſeſs this quality ſpare neither pains nor danger to procure their favourite repaſt: for this reaſon, they often watch the place where the Alligator comes to depoſit it's eggs, and ſeize on the booty the inſtant they can take it with ſafety. The Alligator always breeds near freſh-water rivers; and though it is ſometimes found in the ſea, that may rather be conſidered as a place of excurſion than of abode. It produces it's young by eggs, as has been already hinted; and for this purpoſe the female chuſes a place by the ſide of a river, or ſome freſh-water lake, in which to depoſit her brood. She always ſeeks out an extenſive ſandy ſhore, where ſhe may dig a hole without danger of detection. The ſhore muſt alſo be ſmooth, and rather ſhelving to the water, for the greater convenience of the animal's going and returning; and an eaſy path is alſo ſought near the verge of the ſtream, by which the young may have readier acceſs. When theſe preliminaries are adjuſted, the animal is ſeen cautiouſly ſtealing on ſhore, to depoſit her burden. The preſence of a man, a beaſt, or even a bird, is ſufficient to deter her; and if ſhe perceives any creature in ſight, ſhe always returns: but, ſhould nothing intruſive appear, ſhe proceeds to ſcratch up the ſand with her fore-paws, making a pretty deep hole, where ſhe depoſits from eighty to a hundred eggs, of the ſize

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of a tennis-ball, and of the ſame figure, covered with a tough white ſkin reſembling parchment. This taſk ſhe performs in about an hour: after which, ſhe covers her eggs with the utmoſt care and art, and leaves them till the next day; when ſhe uſes the ſame precaution as before, and lays about the ſame number of eggs; and, the day following, as many more. At laſt, having depoſited her whole quantity, and carefully concealed them in the ſand, they are ſoon vivified by the heat of the ſun; and, at the expiration of thirty days, the young begin to burſt their ſhells. At this time the female appears to be inſtinctively taught that her young require relief; and ſhe therefore proceeds to ſcratch away the ſand, and to ſet them at liberty. Her brood, quickly availing themſelves of the freedom they have gained, part of them naturally run to the water; while the more feeble aſcend the female's back, and are carried thither in greater ſecurity. But no ſooner do they arrive in the water, than both the female and the male immediately become their moſt formidable enemies, devouring as many of them as they can. The whole brood is ſcattered up and down at the bottom of the river; by far the greateſt part are deſtroyed; and thoſe who ſurvive eſcape either through their extreme minuteneſs or ſuperior agility.

Nor is the propogation of the Alligator obſtructed by it's own ſpecies alone; the eggs are not only a delicious feaſt to the ſavage, but are eagerly ſought after by every beaſt and bird of prey. The ancient Egyptians worſhipped the ichneumon as a deity, becauſe of it's ſucceſs in deſtroying the eggs of the Alligator. At preſent, however, that ſpecies of vulture called the gallinazo is it's moſt potent enemy. All along the banks of great rivers, in the tropical regions, the Alligator propagates it's ſpecies in ſuch numbers that, were it not for the vulture, a carnivorous bird which ſeems appointed by Providence to abridge their fecundity, the earth would ſoon be over-run with them. Theſe birds are ever found in greateſt numbers where the Alligators are moſt numerous; and, hiding themſelves within the thick branches of trees which overſhade the banks of rivers, they there watch the female in patient ſilence, and permit them to depoſit their eggs in the ſand without interruption: but no ſooner are they retired, than they provoke one another to the ſpoil; and, flocking round the hidden treaſure, tear up the eggs, and devour them in an inſtant. Nor are they leſs diligent in their attendance while the females are conducting their young to the water; for, ſhould any of them drop by the way, they are ſure to be immediately devoured by the vultures.

Such are the extraordinary accounts given us by modern travellers of the propagation of this animal, which have in general been adopted by Linnæus, and the moſt inquiſitive naturaliſts of the age, particularly Ulloa: yet, were we diſpoſed to argue from the general analogy of nature, the Alligator's devouring her own young as ſoon as ſhe has conducted them to their natural element, ſeems very doubtful; and even improbable. The general idea of this animal's rapacious cruelty may have given birth to the ſtory; whereas, in fact, the Alligator ſeems no more miſchievous than other animals, but in proportion to it's ſuperior ſtrength. It is highly probable that it poſſeſſes the ſame ſenſations of parental tenderneſs as other animals; at leaſt, we are not furniſhed with ſufficient evidence to the contrary.

To what age the Alligator's life may be protracted, we are not certainly informed: however, if we may credit Ariſtotle, the Alligator is coeval with man. But the ancients, either from a blind credulity, or a love of amuſive fables reſpecting this animal, have invented ſo many fictions, that even truth from them becomes ſuſpicious. What we know for certain from the ancients is, that, among the various animals, which fought in the amphitheatre at Rome, the Alligator was not wanting. M. Scaurus produced them alive in his unrivalled exhibitions; and ſuch was the ſtate of luxury and enervation into which the Romans were then fallen, that they regarded him as the beſt citizen, becauſe he amuſed them with the moſt extravagant entertainments.

ALLIGATOR, OPEN-BELLIED. This animal has nothing eſſentially different from the reſt of the ſpecies, except an open purſe or pouch in the middle of it's belly, which ſeems deſigned by nature as a retreat for it's young in time of danger; a circumſtance which ſtrongly inclines us to believe that the Alligator is not ſo unnatural as it is commonly repreſented. Except in this ſingular diſtinction, this animal has all the common marks of the Alligator already deſcribed: namely, a particularly ſtrong, ſquare covering of ſcales on the back; which, in the young ones, appears diſtinct and regular; but, in the old, becomes knobbed and rough; and in having ſmall round and oval ſcales on the ſides, and a ſcaly belly. It is alſo furniſhed with fins on the outſides of it's fore and hinder legs; and with two rows of fins on the ſuperior part of the tail, which begin extremely ſmall at the ſetting on of the tail, and increaſe gradually as they advance towards the middle, where they unite, and ſo continue to the extremity. The tail is roundiſh at it's beginning; but, from the middle, where the two rows of fins unite, it is flatted like an oar. The fore-feet have each of them five toes, but the hinder only four; a diſtinction common to the crocodile tribe. In the fore and hinder feet, only the third and fourth toes are webbed together. The eyes are very prominent, and are ſo contrived as to be elevated above the water while the reſt of the animal is wholly under it; in order, probably, to watch it's prey leſs perceptibly on the ſurface of the water, or on the banks and ſhores of rivers. The head is covered with ſeveral ſcales; and the ſnout is finely creaſed tranſverſely. Mr. Edwards was the firſt naturaliſt who ever deſcribed or noticed this ſpecies.

ALOPECIAS. A name of the vulpes marina, or ſea-fox.

ALOPECOPITHECOS. A name derived from the Greek; uſed by Aldrovandus and others to denote that ſingular animal the opoſſum.

ALOPEX. A ſpecies of dog diſtinguiſhed by a ſtraight tail tipped with black, commonly known by the name of the field-fox.

ALOSE. A kind of fiſh reſembling the ſardine or pilchard, but much larger. Some affirm it to be the ſame with the ſhad; but it is evidently another ſpecies of fiſh, and very ſcarce in Britain. It is one of thoſe called paſſage-fiſhes, or fiſh of a ſeaſon, becauſe it never enters the rivers except in the vernal months. The roes of this fiſh being held in as high eſtimation in the Eaſt Indies as thoſe of the ſturgeon in Ruſſia, they form a very lucrative article of commerce, and are often ſerved up at the tables of Aſiatic luxury.

ALPAGNA. An animal which reſembles the

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llamus and vigognas, except that it's legs are ſhorter and thicker, and it's muzzle fuller and flatter, and formed more like the human face. In Peru, the place of it's nativity, it is reckoned among the beaſts of burden, and is capable of carrying about a hundred weight. The Peruvians make ſtuffs, ropes, and bags, of it's wool; and various mechanical inſtruments of it's bones.

ALPHESTES. A fiſh called by ſome cinædus, approaching nearly to the turdus or wraſſe kind; but the rays or nerves of it's back-fins are prickly down to the very tail, whereas the turdus has only the anterior rays of that fin prickly, the reſt being ſmooth. It is a ſmall fiſh, and is always caught about the ſhores, and among the rocks. It's back is purple; it's ſides and belly are yellowiſh; and it's mouth is ſmall, and furniſhed with thick and fleſhy lips.

ALTAVELA. A flat cartilaginous fiſh of the aquila marina ſpecies; but having it's wings, or more properly it's ſides, thin, flat, broad, and obtuſe, towards their extreme parts. From the ſtrong reſemblance theſe flat ſides bear to wings, the fiſhermen have adopted a notion that this fiſh can fly. The fleſh is ſolid and well-flavoured, and generally ſells at a very high rate. It is caught on the ſhores of the Mediterranean, and is frequently expoſed to ſale in the Italian markets.

ALUCO. A name by which ſome naturaliſts have diſtinguiſhed the common white owl; or, as we uſually call it, the barn or church-owl.

ALUNGU. A Malabar word uſed to expreſs an animal reſembling a lizard, except at the head and tail, which are both pointed. It is nearly ſix feet long, and two broad; and is unqueſtionably a ſpecies of the manis of Linnæus, belonging to the tribe of ant-eaters which are deſtitute of teeth, but are furniſhed with long, round tongues, with which they collect the ants.

AMADAVADE. A curious little bird about the ſize of the creſted wren, having a bill like a chaffinch, and ſpurs like a lark. The bill is a beautiful red, except on the upper part of the upper chap, where it is black in the middle; the upper part of the body is brown; the rump is of a dark red; and the prime feathers of the wings are black; as are alſo thoſe of the tail, which are longeſt in the middle, and gradually ſlope to the ſides. The prime and covert feathers of the wings are marked with ſeveral ſmall white ſpots, and the breaſt and belly with larger black ones.

AMALOZQUE. An appellation under which Nieremberg deſcribes a large Mexican bird. It frequents lakes and rivers, though not furniſhed with webbed feet, one of the common characteriſtics of aquatic birds. The breaſt, belly, and the under-part of the wings, are white; the tail is variegated with black and yellow; and two black circles, a finger's breadth aſunder, ſurround the neck and breaſt. The beak is very long and ſlender; and the inſects common to marſhy places are it's uſual food.

AMEIVA. A Brazilian ſpecies of lizard reſembling the taraguira, but having a double tail. Such is the account Marcgrave gives us of this animal; but Ray very judiciouſly queſtions the fact, and ſeems to doubt whether there is any ſuch ſpecies in nature. Probably what Marcgrave obſerved was only an accidental variety of the taraguira, or ſome other common lizard; or perhaps it's peculiarities originated from ſome external injury, or may be aſcribed to a luſus naturæ.

AMERICAN SEA SUN CROWN. A name given to a marine inſect, becauſe of the reſemblance it bears to the corona ſolis. A particular deſcription of this animal was given by Dr. Peyſſonnel in the Philoſophical Tranſactions of 1758. That gentleman, however, could not acquaint us with it's modes of life, or what it's mechaniſm was; not being able, from his own confeſſion, to diſtinguiſh a mouth, or any viſcera, nor any other probable organ by which it could receive nouriſhment.

AMERICIMA. A Brazilian ſpecies of lizard, of very ſmall dimenſions, ſcarcely meaſuring more than three fingers breadth in length, and of the thickneſs of a ſwan's quill. It's body exhibits a ſquare appearance; it's whole back is covered with deep, grey ſcales; it's head, legs, and ſides, with brown ones; and it's tail with blue: all which are extremely gloſſy and ſmooth to the touch. It's feet are very little thicker than hog's briſtles; and it is generally eſteemed venomous.

AMMOCŒTUS. A name given by Geſner, and ſome other naturaliſts, to the ammodytes or ſand-eel, called alſo tobianus by Schoneveldt.

AMMODYTES. A genus of fiſh, the characters of which, according to Artedi, are the ſubſequent. The branchioſtege membrane contains on each ſide ſeven bones; but theſe, however, are in a great meaſure concealed by the laminæ of the bronchia; the head is compreſſed; the body is oblong and ſlender, nearly cylindrical, but a little compreſſed, and deſtitute of belly fins. This fiſh is of the malacopterygious, or ſoft-finned kind. The other characters of the ſpecies enumerated by Artedi, are theſe: the lower-jaw is largeſt; the lateral lines are double, or two on each ſide; the pectoral fins have each twelve rays; the back-fin has fifty-four; that of the anus has twenty-eight; the tail is bifid, and has fifteen long rays; the mouth is deſtitute of teeth; and the anus is nearer the tail than the head. To this fiſh the inhabitants of Great Britain give the name of the ſand-eel. It is commonly found at about half a foot deep under the ſand, when the tide ebbs; and is caught with iron hooks, with which the fiſhermen pull it out. The name is derived from Ammos, Sand; and Dytes, a Diver; expreſſing a quality peculiar to this animal, that of diving into or hiding itſelf in the ſand. This genus is referred to the order of apodes in the Linnæan ſyſtem.

AMMODYTES. A ſpecies of ſerpent called alſo the ſerpens cornutus. It is nearly the ſize of the viper, and is of a yellowiſh or ſand-colour. It's head reſembles that of the viper, except that it's jaws are wider: and in the upper part it has a kind of wart, like an excreſcence, ſuppoſed to repreſent a horn; whence it's appellation of ſerpens cornutus, or the horned ſerpent. It is found in Lybia, and in ſome parts of Italy; where it is called the ammodytes, or ſand-ſnake, from it's ſand-like colour, as well as from it's quality of ſometimes running under the ſand.

AMMODYTES OF CEYLON. A very large and dangerous ſpecies of ſerpent; it's mouth being furniſhed with a great number of very ſharp teeth. The eyes are large and ſparkling; and the forehead is covered with ſmall round ſcales of various colours; ſome yellow, others red, and the reſt variegated with red and black: the body, both above and below, is of a whitiſh aſh-colour; and on the back are angular ſpots variegated with white and brown. The ſcales on the upper part of the body

body are placed like net-work, with large interſtices; and the tail is ſpotted with brown, terminating in a bony point.

AMOGLOSSUS. The claſſical name of a peculiar kind of flat-fiſh ſomewhat reſembling the ſoal, and known in ſeveral parts of England by the title of the lantern. It's body is very ſlender, pellucid, and white; it never exceeds three inches in length; and is extremely ſmooth, being covered with a great number of very thin ſcales, which fall off on touching them.

AMORE. A genus of fiſh, of which there are three ſpecies; the Amore Pixuma, the Amore Guacu, and the Amore Tinga.

The Amore Pixuma has a very broad head, and a large mouth, but is deſtitute of teeth. It's body is oblong; it's back and ſides are of a duſky iron colour; it's belly is white and protuberant; it's ſkin is ſoft; and it is furniſhed with ſeven fins, excluſive of the tail, which is rounded at the end.

The Amore Guacu is of an oblong figure, like the former, and grows to about ſix inches in length. The head is thick, the gills are large, and the mouth is furniſhed with ſmall teeth; the eyes are ſmall, the pupils being large, and the irides of a yelloviſh hue. This fiſh has likewiſe ſeven fins, beſides the tail, which is long, and rounded at the end. It is covered with pretty large ſcales, and is of a ruſty iron colour, but ſomewhat paler on the belly than in any other part.

The Amore Tinga is of the ſame ſhape with the Amore Guacu, but is much ſmaller, and covered with whitiſh ſcales, ſtudded with brown ſpots. The tail is brown, and waved with different ſhades of that colour.

All the three ſpecies are eſteemed wholeſome food, though the firſt generally obtains the preference. They are natives of the American ſeas, and very numerous on the Brazilian coaſts.

AMPELIS. In the Linnæan ſyſtem, the name of a genus of birds of the order of paſſeres; the diſtinguiſhing characteriſtics of which are, that the tongue is furniſhed with a ſurrounding rim or margin, and that the beak is of a convex and ſtraight figure. This genus has ſeven ſpecies.

The word Ampelis is alſo uſed by ſome naturaliſts to ſignify a bird of the magpye-kind, called by others the garrulus Bohemicus.

AMPHIBIA. The third claſs of animals, whoſe diſtinguiſhing characteriſtics, are, according to Linnæus, that they have either naked or ſcaly bodies; that they are deſtitute of grinders, or dentes molares, the other teeth being ſharp and pointed; and that they are without radiated fins. The heart has but one ventricle, and they reſpire through their lungs.

This claſs is ſubdivided into three orders; namely, reptiles, ſerpents, and the ſwimming amphibia, comprehending twenty-four genera and two hundred and eighty-nine ſpecies.

AMPHISBÆNA. The name of a genus of ſerpents in the Linnæan ſyſtem. The Amphiſbæna, or the double-headed ſerpent, is remarkable for moving either backwards or forwards with equal facility; and from hence it has been thought to have two heads. This error in part originated from the thickneſs of the tail; which, at a diſtance, may eaſily be miſtaken for another head: on a more minute inſpection, however, the error becomes apparent, and the animal is found to be formed according to the uſual courſe of nature. Both extremities are nearly of an equal thickneſs; the colour of the ſkin reſembles that of the earth, and is rough, hard, and covered with various ſpots. Some have affirmed that it's bite is dangerous; but this is evidently a miſtaken opinion, as it is deſtitute of the fangs, and conſequently wants the means of preparing the venom. Indeed, this animal is only formidable from it's ſimilitude to the viper.

Linnæus enumerates two ſpecies of Amphiſbæna; which he diſtinguiſhes by the names of the fuliginous, and the white, both natives of America.

AMPHISBÆNA AQUATICA. A name given by ſeveral naturaliſts to that long and ſlender inſect called the ſeta aquatica, and vermis ſetarius. It receives the name of Amphiſbæna from it's peculiar property of having both a progreſſive and retrograde motion, which it performs with equal celerity. It's uſual length is four or five inches, and it's thickneſs about that of a fine horſe-hair.

The ingenious Liſter, in proſecuting his enquiries into the hiſtory of a very different ſort of inſect, diſcovered the origin of this worm. Diſſecting one of the common black-beetles dug up in a garden, he perceived two of theſe hair-worms, or Amphiſbæna, in it's belly; and, repeating his experiments, he found that the black-beetle uſually contained two or three of theſe little animals, which crawl out immediately on opening the body. The creatures, when put into water, ſwim about very nimbly for a conſiderable time: but often thruſt their heads above the fluid, as if deſirous of eſcaping; ſometimes faſtening with their mouths on the ſides of the veſſels in which they are immerged, and drawing their whole bodies after them.

The Amphiſbæna Aquatica is commonly found in the water, as it's name imports; but it is frequently met with in the earth, and ſometimes on the leaves of trees and ſhrubs in hedges and gardens.

AMPHITRITE. A ſmall naked ſea inſect, of an oblong figure, with only one tentaculum which is like a piece of fine thread. There are ſeveral ſpecies of the Amphitrite; ſome of which are marginated, and variouſly indented, ſo as to reſemble quills.

AMPHODONTA. Such animals as are furniſhed with teeth in both jaws.

AMPULLACEÆ CONCHÆ. A name by which ſome naturaliſts have expreſſed a genus of ſhells, called by others conchæ globoſæ and dolia, and by the French naturaliſts tonnes. See DOLIUM.

AMYGDALA. The name of a ſpecies of echinus marinus, of the genus of briſſoides.

AMZELL. A name applied to a bird of the merula or blackbird kind, of which there are three ſpecies; viz. the Ring or Rock Amzell, or merula terquata; the merula montana, or Common Amzell; and the merula roſea, or Roſe-coloured Amzell.

The Ring Amzell is very little larger than the blackbird. It's back is of a duſky blackiſh brown; it's throat and breaſt are beautifully variegated with ſpots and ſtreaks of white; and the lower part of the throat is adorned with a fine white ring, whence the bird obtains it's name. This ring is of a lunated ſhape, the points terminating at the ſides of the neck. The wings and tail are of a blackiſh hue; but ſomewhat varied with a greyiſh white in the female. This bird is common about the Peak in Derbyſhire, and is there called the rock ouzel.

The Common Amzell differs from this laſt, in not having any ring about it's neck; that part being

variegated with a brownish red intermixed with black spots.

The Rose-coloured Ariuell is common in Lapland and some other European countries, but is seldom found in Great Britain. See Ouzel.

ANABLEPS. In the Artedian system, the name of a new genus of fish of the malacopterigious kind; the distinguishing characteristics of which are, that the branchiastege membrane contains six bones, and there is only one small fin at the extremity of the back. Of this species of fish there are but few specimens extant. The Anableps is a species of the cobitis in the Linnæan system.

ANACA. A Brazilian species of parroquet, about the size of a lark. The beak is brown and hooked; the crown of the head is covered with liver-coloured feathers, and there are circles of brown ones near the eyes. The throat is grey; the upper-parts of the neck and sides are green; the belly is of a reddish brown; the back is green, with a pale brown spot; and the tail is likewise of a pale brown. At the top of each wing is a deep blood-red mark; and the other parts of the wings are green, except their extremities, which have a blueish tinge. The thighs are covered with green feathers, and the legs and feet are grey.

ANACANDAIA, or ANACONDA. A Ceylonese serpent of enormous magnitude, extremely mischievous among cattle; whence it has also obtained the name of bubalinus.

The following strange account of the Anaconda, said to be written by an English gentleman resident in the East Indies, and signed R. Edwin, was inserted in the Edinburgh Evening Courant of August 15, 1768, and from thence found it's way into most of the English periodical miscellanies. We give it, therefore, rather as the only particular account we have been able to obtain of this astonishing serpent, than as one on which we can think of hazarding our own veracity.

'Some years since the commands of my directors carrying me to Ceylon, to transact an affair of no little consequence, I had an apartment prepared me on the skirts of the principal town, facing the woods. At some distance from my window there was a rising ground, on which stood three or four large palm-trees, that afforded me every morning, as I lay in bed, a delightful prospect. One morning, as I was looking at these, I saw, as I thought, a large arm of one of them in strange commotions, bending and twisting about (but there was no wind) and often striking one end to the earth, then raising it again, and losing it among the leaves. I was gazing at this with great amazement, when a Ceylonese coming in, I begged him to look and wonder with me. He looked, and was more amazed and terrified than myself. In short, a paleness overspread his whole face, and he seemed almost sinking to the earth with terror. He conjured me to bar up all my doors; and then told me, that what appeared an arm of the tree, was in reality a serpent of that monstrous size, diverting itself with it's various contorsions, and now and then darting down to the earth for prey. I soon found the truth of what he told me; and, looking with more circumspection, saw it seize a small animal and take it up into the tree. Enquiring farther about this strange sight, the Ceylonese told me that the only wonder was, that the creature was so near us; for it was a serpent but too well known in the island, though it usually kept in the inland parts and woods, where it often dropped from the covert of a large tree, and devoured the unwary traveller. A relation so strange as this could never have gained credit with me, had I not, at the same instant, perceived a creature capable, from it's size, of doing even more than was related. The monster continued to divert itself; and we assembled in a body of twelve, all on horseback and well armed, to destroy it. We rode up towards the place: but, that we might not expose ourselves to unnecessary danger, we surrounded the ground, and rode behind a close thicket, from whence we might, unseen, level our fire-arms. It was by this time the heat of the day; and, when we arrived, we found it so much larger than we had conceived, that every man of us wished himself safely at home, and it was a long time before any one had the resolution to fire. We had now time to observe the creature; and, believe me, all the descriptions of monsters of this kind hitherto given are trifles, when compared with what we saw. The natives agreed that it was much larger than any they had ever seen, and such a mixture of horror and beauty blended together, no eyes but those which saw it can conceive. The creature was more than as thick as a slender man's waist; yet seemed far from fat, and very long in proportion to it's thickness. It often hung by it's tail from the highest boughs of the tree; and being most surprizingly nimble, was now diverting itself, in the heat of the day, with a thousand gambols round the branches of the tree: sometimes coming down, twisting it's tail round the bottom of the trunk, and darting itself to it's whole length around. In the midst of one of these gambols, we were surprized to see it get up in haste into the tree. But the cause soon appeared: a small animal, of the fox kind, but not like our English foxes, immediately approached; which the serpent having seen coming, took this way to be prepared for it; and, darting down on the unwary creature from the tree, swallowed it in an instant. Then licking it's chops, with a broad double tongue of a blackish colour, it laid itself at full length on the ground, but with it's tail still twisted round the tree. In this posture I had leisure, with horror, yet with admiration, to behold it. It was covered with scales like those of a crocodile, all ridged up in the middle; it's head was green, with a vast black spot in the middle, having yellow streaks round the jaws; it had a yellow circle like a golden collar, round it's neck, behind which was another great spot of black; and it's sides were of a dusky olive colour. It's back was more beautiful than can well be imagined: down the middle of it was a broad chain of black, curled and waved at the edge; and, round this, all the way, a narrow one of flesh-colour, the outside of that having a very broad one of a bright yellow, waved and curled in various inflexions, and spotted all over at small distances, with great round and long blotches of a perfect blood colour. It's head was very flat, but extremely broad; and it's eyes were monstrously large, bright, and terrible. These were the colours as it lay motionless; but, when it moved about in the sun, it was a thousand times more beautiful: the colours, according to the several shades of light, presenting the eye with a vast variety of hues, and in many places looking like the changeable colours in silks.

'We now all levelled at it as it lay, and fired at it's head; but, whether it accidentally moved just at that time, or our fears made us take bad aim, or what-

whatever elſe might be the cauſe, we either miſſed or never hurt it. In ſhort, the animal took no notice of our fire; and, after a conſultation, we all agreed to make no farther attempt, till we had engaged a ſtronger party for the next day.

'The Ceyloneſe ſeemed to know the creature well: they called it the Anaconda, and talked of eating it's fleſh when they caught it; which they had no ſmall hopes of doing, as it ſeldom quits, for a long time, any tree it once chuſes for it's dwelling. I detained them to dine with me; and the afternoon was ſpent in relating the amazing things which one or other of the company had ſeen this ſort of monſter perform; in ſhort, they told me a thouſand circumſtances which far exceeded my credulity. But what I myſelf beheld the following day, went as much beyond all they had told me, as what they had related ſeemed to exceed truth and probability.

'The next morning, having aſſembled to the number of more than a hundred, we had the pleaſure, if I dare call it ſo, of finding our enemy ſtill at his old poſt. He ſeemed very fierce, and hungry, and we ſoon had an opportunity of perceiving the amazing effects. There are great plenty of tygers in this country; and one, of a prodigious ſize, being not much leſs than a common heifer, now came under our ſerpent's tree. Inſtantly we heard a dreadful ruſtling; and, ſwift as thought, the ſerpent dropped upon it, ſeizing it acroſs the back, a little below the ſhoulders, with it's horrible mouth, and taking in a piece of the back bigger than a man's head. The creature roared with agony; and, to our unſpeakable terror, was running with it's enemy towards us. It's courſe, however, was ſoon ſtopped; for the nimble adverſary, winding it's body three or four times round the tyger's, girt it ſo violently, that it fell down in an agony. The moment the ſerpent had fixed it's folds, it let go the back of it's prey; and, raiſing and twining round it's head, opened it's own mouth to the full extent, and ſeized the whole face of the tyger, biting and grinding it in a moſt horrid manner, and at once choaking and tearing the creature to pieces. The tyger, on this, reared up again; and words are too poor to paint it's agony! It writhed and toſſed about, but all in vain; the enemy, wherever it went, was ſtill with it, and it's hollow roaring within the deſtroyer's mouth was dreadful beyond expreſſion. I was for firing on the monſter in this ſtate: but my companions proteſted againſt it, telling me they knew it's cuſtom ſo well, that they were very ſure of maſtering it in the end, without any trouble or hazard; but if they were then to diſturb it, the animal would be ſo outrageous that ſome of our lives muſt aſſuredly pay the forfeit. They ſeemed to know ſo well what they were about, that I readily acquieſced. Several of us ſpent the whole day in obſerving this ſtrange ſpectacle; and, ſurely, the agonies of the tyger were beyond all that can be conceived, and it's death more horrid than a thouſand other deaths with all their tortures united! The tyger was a very ſtrong and fierce creature; and, though unable to hurt or get rid of it's cruel enemy, gave it prodigious trouble. A hundred times would it rear up, and run a little way; but ſoon fell down again, partly oppreſſed by the weight, and partly by the folds and wreathed twiſts of the ſerpent round it's body. But though the tyger fell, it was far from being entirely conquered, or at all manageable. After ſome hours, it ſeemed much ſpent, and lay as if dead; when the ſerpent, which had many times violently girded itſelf round the tyger, vainly attempting to break it's bones, now quitted it's hold, twiſting it's tail only round the neck of it's prey, which was in no condition either to reſiſt or eſcape. It made towards the tree, dragging with ſome difficulty it's victim after it; and now appeared the double uſe of the tree to the ſerpent. Nature ſeems to inſtruct this creature that, though it can conquer ſuch large animals, their bodies are too thick for it's ſwallow, and it muſt therefore break their bones, and reduce them to a ſoft maſs, before it can manage them. This it uſually does, (as we ſaw attempted on the tyger) by girting the body very firmly round, and then cruſhing it to pieces: but, when that method proves ineffectual, it has recourſe to the tree, as we now had opportunity of obſerving. Having by degrees dragged the tyger to the tree, and the animal being unable to ſtand, the ſerpent ſeized it lightly a ſecond time by the back, and ſet it on it's legs againſt the trunk of the tree; then, winding it's body round the tyger and the tree together ſeveral times, it girded both with ſuch violence, that the ribs and other bones began to give way: and, by repeated efforts of this kind, it broke all the ribs, one by one, each of which gave a loud crack in breaking. It next attempted the legs, and broke them ſeverally in the ſame manner, each in four or five different places. This employed many hours, during all which time the poor tyger remained alive; and, at every crack of the bones gave a howl, not very loud, but piteous enough to pierce the moſt obdurate heart, and make even man forget his natural antipathy to the tyger, and pity it's miſery. After the legs, the ſerpent attacked the ſkull in the ſame manner: but this proved ſo difficult a taſk, that the monſter, overcome with fatigue, and ſeeing it's prey in no condition to eſcape, left it for the night at the foot of the tree, into which itſelf retired to reſt. This gave us an opportunity of going home; and, for my own part, I could not ſleep for thinking of the poor tyger, which was naturally ſo ſtrong and vigorous that we left it ſtill alive, though broken and mangled in this miſerable condition.

'In the morning, on returning to the thicket, we beheld a ſurprizing change: the body of the tyger, which now ſeemed one red lump of ſhapeleſs matter, was dragged to ſome diſtance from the tree, and ſhone all over as if covered with glue or jelly. We ſoon plainly diſcovered the meaning of all this, the ſerpent being ſtill employed in producing that appearance. It had laid the legs one by one cloſe to the body, and was now placing the head ſtraight before, licking the body, and covering it with it's ſlaver; which, coating it over like a jelly, rendered it fit for ſwallowing. Much time was employed in this buſineſs: but, at length, the ſerpent having prepared the whole to it's mind, drew itſelf up before it's prey; and, ſeizing the head, began to ſuck that, and afterwards the body, down into it's throat. This was the work of ſo much time, that I left the monſter ſtruggling at the ſhoulders when I went home to dinner; and, by the accounts of thoſe who ſtaid to watch, it was night before the whole was fairly ſwallowed.

'The following day, we aſſembled for the laſt time: when the very women and children followed; convinced that, as it had gorged it's prey, there was then no danger. I was by no means ſatisfied of this till I reached the place, but then found it very true. The ſerpent had ſo loaded it's belly, that it could neither fight nor retreat. It attempted, on our approach, to climb the tree; but, being unable,

unable, was ſoon diſpatched, by ſtriking it on the head with large clubs. I then meaſured it, and it's length was thirty-three feet four inches. Being immediately cut up, it's fleſh appeared whiter than veal; and, from the report of thoſe who eat it, was far more delicious than any fleſh they had ever before taſted.'

ANADROMUS. A term of diſtinction in ichthyology, ſerving to denote ſuch fiſhes as have their ſtated periods of going from the freſh-water to the ſalt, and afterwards returning to the freſh-water again; of which kind are many of the trutaceous ſpecies.

The method nature ſeems to have decreed for their courſe of changes ſeems to be the following: they are firſt produced from the ſpawn in freſh-water rivers, where they continue till they arrive at a proper ſize, and acquire ſome ſtrength; after which they ſeek the ſalt-water, in order to feed more at large, and attain to their full dimenſions. At this period they return to the freſhes, to depoſit their ſpawn, that their young brood may have the ſame advantages of ſpending their adoleſcent ſtate in more ſecurity; when they again reviſit the ſea.

The term is derived from the Greek words, Ana, Back again; and Dromos, a Courſe.

ANARRHICAS. The Artedian name of a fiſh called by others the lupus marinus. In the Linnæan ſyſtem, it is a genus of the order of apodes.

ANAS. In the Linnæan ſyſtem, the name of a large genus of birds of the general order of anſeres. The diſtinguiſhing character of this genus is, that the beak is convex, terminating in an obtuſe point; ſuch as the ſwan, the gooſe, the widgeon, the duck, &c.

ANAS CAMPESTRIS. The name of a bird common in France, uſually called the tetrax and canne petriere. It is of the ſize of the pheaſant, and of the nature of the buſtard, having no hinder toe. It runs very ſwiftly, makes it's neſt on the ground, and ſits in the water after the ſame manner as the duck, from which circumſtance it derives it's name.

ANATIFERÆ CONCHÆ. The name of a genus of ſhells of the multivalve kind. Theſe ſhells are quinquivalves; and are compoſed of two large valves, with two ſmaller ones beneath them, and a long, narrow, ſpur-like valve, which connects them, and runs lengthwiſe. The cabinets of the curious furniſh only four ſpecies of this genus.

The Latin name Anatifera is derived from the fabulous ſtory of their becoming geeſe; whence, alſo, the Engliſh name barnacle, as they were ſuppoſed by our credulous progenitors to breed the barnacles or brent-geeſe.

ANCHOVY. A well-known ſmall fiſh much uſed in ſauces, as it's name implies both in the Spaniſh and Italian languages. Scaliger deſcribes the Anchovy as a ſpecies of the herring, about a finger's length, having a pointed ſnout and a wide mouth with ſerrated gums inſtead of teeth; others make it a ſpecies of the ſardine or pilchard; but modern naturaliſts, with better reaſon, eſteem it a peculiar ſpecies, very different from either.

The genuine Anchovy is caught in prodigious quantities in the Mediterranean; and particularly at Gorgona, a ſmall iſland weſt of Leghorn. It is likewiſe found on the coaſts of Catalonia and Provence, and ſometimes on the weſtern coaſts of England and Wales. Anchovies are chiefly fiſhed for in the night; when a light being put on the ſtern of the fiſhing veſſels, they flock round, and are taken up with nets. But then it is aſſerted, though we cannot ſay with what degree of credibility, that the Anchovies taken in this manner are neither ſo good, ſo firm, nor ſo proper for keeping, as thoſe which are caught without that expedient.

When the heads of the Anchovies are cut off, and their galls and guts taken out, they are ſalted and barrelled. The common way of eating them is with oil and vinegar, after ſtripping them of their bones, fins, and tails. Being put on the fire, they diſſolve in any liquid; or they may be made into ſauce, by mincing them with pepper and other ſpices. Some pickle Anchovies in ſmall earthen pots of two or three pounds weight, which they cover with plaiſter to preſerve them the better. Anchovies ſhould be choſen ſmall, externally white, and internally red: they ſhould alſo have round backs; ſuch as appear flat being only a ſubſtitution of ſardines. Beſides theſe qualities, the pickle, on opening the barrels, ſhould be well-taſted, and retain it's original flavour.

The Anchovy ſeldom exceeds ſix inches in length. It's body is ſlender, but thicker in proportion than that of the herring; the eyes are large, the irides being white with a yellowiſh caſt. The inferior jaw is conſiderably ſhorter than the ſuperior; the teeth are ſmall, one row in each jaw and another on the midle of the tongue; the tongue has a double ciliation on both ſides; and the dorſal fin, which conſiſts of twelve rays, is placed nearer the head than the tail. The ſcales are large and deciduous, the back is green, and ſomewhat pellucid; the ſides and belly are ſilvery, and the tail is bifid.

ANDIRA, or ANDIRA GUACU. A Braſilian ſpecies of bat, the largeſt of which is as big as an European pigeon. The Andira are frequently called horned bats, from a ſort of excreſcence or pliant body above their beaks. Some of them are accounted very dangerous; as they get into chambers during the night, and open with ſo much ſubtlety the veins in the feet of thoſe who are aſleep, that the miſchief is not perceived till the effuſion of blood, which it is often difficult to ſtop, occaſions a diſcovery. The tongues and hearts of theſe animals are ſuppoſed by the natives to poſſeſs poiſonous qualities.

ANDORHINA. A name by which the Portugueſe in the Brazils call the Braſilian ſwallow, more uſually known by it's Braſilian name tapera.

ANEMONIES, SEA. A ſpecies of the actinia; the natural hiſtory of which has lately been ably elucidated by the Abbé Dicquemarre, who has diſcovered four or five different ſpecies. They vary conſiderably in their ſize, ſhape, and colour, but are generally found to reſemble a truncated cone: and many of them are of an uniform colour, while others are ſtriated with regular, and ſome with irregular ſpots. They are found adhering to rocks or ſtones in the ſand, or in oyſter-beds; and they are obſerved to ſtretch out their limbs and mouths, in order to ſeize whatever touches the ſurface of the ſand where they lodge. This accurate obſerver could eaſily diſtinguiſh theſe animals from plants, by their progreſſive motion; by the means they employ to ſecure their prey, and to defend themſelves; by their deglutition, digeſtion, and evacuations; and alſo by the propagation of their ſpecies. He accordingly places them among the number of ſpontaneous animals. The Anemonies have a ſurprizing power of reproduction; for, by many experiments, this property has been aſcertained, which the Abbé conjectures ariſes from

from their gelatinous texture. Their limbs budded out ſucceſſively, after ſeveral amputations: nay, ſome of them being diſſected through the body, the baſis, together with that part of the ſtump which was left, ſurvived, and projected new limbs, and the animals ſoon began to move, and eat bits of muſcles, their uſual food. They appear to have a conſiderable degree of heat, and to live in a vacuum, or at leaſt in a very rare air; and, for a conſiderable time, they require no other ſubſiſtence than what they find diſſeminated in the ſalt-water.

The Anemonies are irritable to a very high degree; and they are exceſſively affected by the light, though to appearance they have no eyes: the Abbé has accordingly made uſe of them to indicate the different changes of temperature in the atmoſphere; and of this new kind of barometer he favours us with the ſubſequent account.

The ſea-water in which the Anemonies are for this purpoſe placed muſt be daily renewed; this muſt be their only nouriſhment; and the obſervation ſhould be made at intervals equally diſtant from the time of each renewal. If the Anemonies be ſhut up and contracted, there is reaſon to apprehend an approaching ſtorm; that is, high winds, and conſequently an agitated ſea—when they are all ſhut, but not remarkably contracted, they indicate weather ſomewhat leſs boiſterous; but, nevertheleſs, attended with gales, and a rough ſea—if they appear in the leaſt open, or alternately and frequently opening and cloſing, they indicate a medium ſtate both of the winds and waves—if they are quite expanded, tolerably fine weather, and a calm ſea, may be expected—and when their parts are conſiderably extended, and their limbs divergent, they infallibly prognoſticate fixed fair weather, and a very temperate ſea. The glaſs in which they are depoſited ſhould be ſwung at ſea, in the ſame manner as the compaſs, that the rolling of the ſhip may agitate the water as little as poſſible.

Theſe animals are viviparous; ſeveral of them having brought forth eight or ten young ones in the Abbé's hand. They feed on wandering nettles or ſea-gellies, and are all proper to be eaten. Being removed into freſh-water, they acquire a pale colour, their external covering becomes flabby, and they very ſoon die. See ACTINIA.

ANGEL FISH. A beautiful fiſh in Sir Aſhton Lever's Muſeum, where it was depoſited by the late Captain Cook. The body is about fourteen inches long, and ten wide; being wholly of a very dark olive green, except the centre, which is of a deep yellow. The tail, and ſmall fins behind the gills, are of a deep orange red, tipped with yellow; and the large fins, the biggeſt of which is on the back, are alſo of a dark olive green.

ANGEL FISH. The uſual Engliſh name for the ſquatina of Pliny, called alſo the monk-fiſh by ſome naturaliſts. This fiſh, though it ſeems to connect the genus of rays and ſharks, partaking of the character of both, is nevertheleſs an exception from each in the ſituation of the mouth, which is placed at the extremity of the head. The head is large, the teeth are broad at their baſe, but ſlender and very ſharp above, and diſpoſed in five rows round the jaws. By means of muſcles uniting them to the jaws, the teeth are capable of being raiſed and depreſſed like thoſe of the other ſhark tribe, not being lodged in ſockets as thoſe of cetaceous fiſh are. The eyes are ſmall; the pupils being of a pale green, the irides white and ſpotted with brown; and behind each eye is an orifice in the form of a creſcent. The back is of a pale aſh-colour, and extremely rough, having a prickly tuberculated line down the middle; the belly is white and ſmooth; the pectoral fins are large, and extend from the body, in a horizontal poſition, to a conſiderable diſtance, bearing ſome reſemblance to wings. The ventral fins are placed after the ſame manner; and in theſe the double penis is ſituated, which forms a diſtinguiſhing character in the males of this genus. The tail is bifurcated, the ſuperior lobe being a little longer than the inferior; and on the back, not very far from the extremity, are two fins.

This fiſh grows to a great ſize, ſometimes weighing near a hundred pounds, and is frequently caught on the Britiſh coaſts, where it preys like others of it's ſpecies. It is extremely voracious, and feeds on flounders and flat-fiſh, which keep at the bottom of the water. It is exceedingly fierce, and dangerous to approach; and inſtances have occurred of it's tearing fiſhermen in a terrible manner, when they have chanced to incloſe it in their net, and incautiouſly laid hold of it. It has a peculiar malignity in it's aſpect; the eyes being oblong, and placed lengthwiſe in the head, ſunk, and overhung by the ſkin. The ancients made uſe of the ſkin of the Angel Fiſh to poliſh wood and ivory; and eſteemed it's fleſh the greateſt delicacy of all the cartilaginous tribe, as appears from Athenæus: but the moderns diſregard it, on account of it's coarſeneſs and rankneſs.

ANGLE SHADES. An Engliſh moth, the caterpillar of which feeds on nettles, chickweed, and ſome other plants; where it may be found full fed about the middle of April, when it appears large and ſtrong, and of a fine tranſparent green, with an opaque ſtreak down the back. It changes to a chryſalis within a ſpinning on the ſurface of the earth; and, in the ſpace of thirty days, the moth appears. The chryſalis is of a fine deep gloſſy red colour, and is remarkable for having two ſharp points at the extremity of it's tail. The moth ſoon lays it eggs, which produce caterpillars that arrive at maturity about the beginning of July, change to chryſalides, and appear in the moth ſtate about the middle of September. This brood ſoon after depoſit their eggs, which remain during the whole winter in a caterpillar ſtate, and are full fed about the end of April.

ANGLER, COMMON. A very ſingular ſpecies of fiſh, known to the ancients by the name of batrachos, and kana; and to us by that of the toad-fiſh, frog-fiſh, or ſea-devil. It reſembles a frog in it's tadpole ſtate, from which it derives one of it's common appellations, and often grows to the length of four or five feet. It is one of the moſt deformed fiſh in nature. The head, which is conſiderably larger than the whole body, is round at the circumference, and flat above; and the mouth is ſometimes a yard wide. The under-jaw is conſiderably longer than the upper; and both are full of ſlender ſharp teeth. In the roof of the mouth are two or three rows of the ſame; and at the root of the tongue, oppoſite each other, are two elliptical bones, thick ſet with very ſharp teeth. The noſtrils have no external orifice, but there are two large internal ones in the upper part of the mouth, which ſupply their place. On each ſide of the upper-jaw are two ſharp ſpines, beſides others which are ſcattered over the upper part of the head. Exactly above the ſnout, are two long tough filaments; and on the back are three others, to which Pliny gives the name of corniculæ, and ſays it makes uſe of

them to attract ſmall fiſh. With theſe extended, he informs us, it hides in muddy waters, and leaves nothing but the beards to be ſeen; the curioſity of the ſmaller fiſh brings them to view theſe filaments, and their hunger inducing them to ſeize the bait, the animal in ambuſh ſuddenly draws in it's filaments with the little fiſh which had taken the bait, and inſtantly devours them. This ſtory, though improbable enough, has gained credit among ſome of our moſt diſtinguiſhed naturaliſts, though a ſtrong preſumption to the contrary may fairly be inferred, from the conſideration that there is one ſpecies of this fiſh deſtitute of theſe filaments, which it certainly would not want were they neceſſary to the exiſtence of the kind. Along the edges of the head and body are a great number of ſhort fringed ſkinny ſubſtances, placed at equal diſtances. The ventral fins are broad, thick, and fleſhy, jointed like arms, and in the inſides divided into fingers. The aperture to the gills is ſituated behind, and is very large; the back fin is placed very low, near the beginning of the tail; and the anal fin is beneath, nearly oppoſite the former. The body becomes extremely ſlender near the tail, the end of which is quite even. The upper part of the Common Angler is of a duſky colour, the lower part is white, and the ſkin is ſmooth throughout.

Rondoletius informs us, that if we take out the bowels of this fiſh, the body will exhibit a tranſparent appearance; and that, if a lighted candle be placed within the body, as in a lanthorn, the whole will have a very luminous and formidable aſpect. The fiſhermen, in general, entertain a very great veneration for this ugly fiſh, ſuppoſing it to be an enemy to the dog-fiſh, the body of that fierce and voracious animal being frequently found in it's ſtomach; for which reaſon, whenever they happen to catch the Common Angler, they compliment it with it's liberty.

ANGLER, LONG. A ſpecies of fiſh very little known by naturaliſts, otherwiſe than by deſcription. Dr. Borlaſe ſays, that it is much longer than the common kind; that the head is more bony, rough, and aculeated; that it has no fin-like appendages round it's head, but that on each ſide of the thinner part of the body there is a ſeries of them three quarters of an inch in length, beginning beneath the dorſal fin, and reaching within two inches of the tail; and that, at the extremity of the pectoral fins, there are ſpines nearly two inches long, and others of three quarters of an inch at the end of the tail.

ANGUELLA. A name given by ſome naturaliſts to the fiſh more uſually called the hoſpetus or atherina, commonly caught on the ſhores of the Mediterranean, and eſteemed very delicate food.

ANGUILLA. See Eel.

ANGUILLIFORM. A term applied to expreſs a very large claſs of fiſhes, which are ſoft and lubricous like the eel, and deſtitute of ſcales. This term is derived from the Latin words Anguilla, an Eel; and Forma, Shape or Appearance.

Moſt fiſhes comprized in this claſs are long and ſlender-bodied like the eel: ſome have no fins either at the gills or belly, as the murus and lampetra; others have fins at their gills, but none on their bellies, as the ſea-ſnake, eel, conger, ophidion, and ammodytes; and others are furniſhed with both, as the teniæ, muſtellæ, alaudæ, and the like.

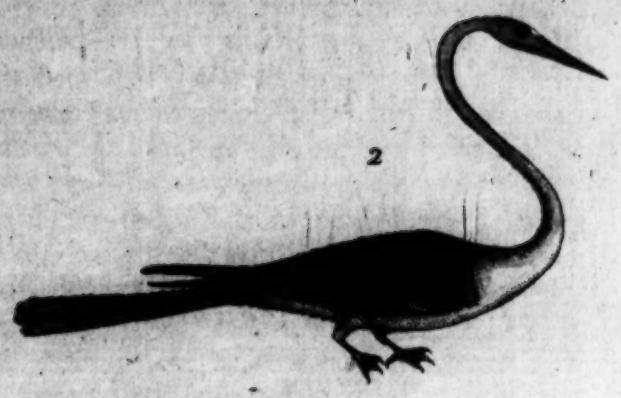
The word Anguilliform is alſo applied to certain land animals, bearing ſome diſtant reſemblance to eels, though they certainly do not belong to that claſs. In this ſenſe we ſpeak of Anguilliform worms, &c.

ANGUIS. A diſtinct and numerous genus of the order of ſerpents, and claſs of amphibious animals, in the Linnæan ſyſtem; the characteriſtics of which are, that they have a ſcaly body of a cylindric figure, and are deſtitute of feet. See Snake.

ANGUIS ESCULAPII. See Coluber.

ANHIMA. A Braſilian bird, ſomewhat reſembling the crane kind, though not regularly referable to that claſs. It is a water-fowl of the utmoſt rapacity, and larger than a ſwan. The head is ſmall in proportion to the body; and the bill, which is black, not above two inches long. But the moſt diſtinguiſhing peculiarity of this bird, is a long round horn, of an ivory colour, which grows from the fore-part of the head, and is ſurrounded by a ſmall tuft of black and white feathers. This formidable bird, which ſeems armed at all points, has alſo in the front of each wing, at the ſecond joint, two ſtraight triangular ſpurs about the thickneſs of a ſwan's quill; the foremoſt of theſe ſpurs being about an inch long, the hinder one ſomewhat ſhorter, and both of a duſky colour. It's claws are long and ſharp, and connected by a membrane, as in the cormorant and duck kinds. It's tail is about eight inches long; and it's wings, when folded, reach more than half the length of the tail. The head and neck are of a yellowiſh colour, and covered with extremely ſoft feathers; the breaſt, belly, and thighs, are of a ſilvery white; and the upper part of the back is brown ſpotted with yellow, all the reſt being black. The Anhima has a loud and terrible cry, ſounding ſomething like 'Vyhoo! Vyhoo!' It is never found alone, but always in pairs; the cock and the hen conſtantly prowling together: and ſuch is ſaid to be the fidelity of theſe birds, that when the one dies, the other remains by the dead carcaſe till it expires with hunger. It builds a neſt of clay on the ground, near the trunks of trees, in the ſhape of an oven.

ANHINGA. A very elegant ſpecies of the mergi aquatici, or divers, in the Brazils, particularly among the people called Tupinambæ. This fowl is thus deſcribed by Willughby. It's body, except the neck, is the ſize of a common tame duck's; it's bill, which is ſharp and ſlender, is three inches long, the foremoſt half of the lower and upper parts containing a double row of little hooked teeth inclining backwards; it's head, which ſomewhat reſembles a ſerpent's, is not two inches long; it's eyes are black, encircled with gold; and it's round ſlender neck is a foot in length, though the body is only ſeven inches. The legs are remarkably ſhort, and the thighs are feathered. It hath four toes; three turned forwards, joined together by membranes, after the manner of ducks or cormorants; the fourth ſhorter, extended ſideways below, and joined to the reſt by a membrane. The claws are very ſharp and crooked. It has a broad tail, ten inches long, conſiſting of twelve feathers; and the wings terminate about the middle of the tail. The bill is grey, and after it's riſe a little yellowiſh. All the head and neck are covered with very fine feathers, as ſoft to the touch as velvet; on the upper ſide a colour from grey inclining to yellow, and thoſe at the throat being entirely grey. The whole breaſt, lower belly, and upper legs, are covered with ſoft feathers of a ſilver colour; and the beginning of the back is cloathed with brown ones, each having an oblong ſpot of whitiſh yellow in the centre, ſo that it appears ſpeckled:



1. ANHIMA. 2. ANHINGA. 3. COMMON ANT. 4. NEUTRAL ANT. 5. GREAT ANT-EATER. 6. LESSER ANT-EATER.

7. COMMON ANTELOPE. 8. ROYAL ANTELOPE. 9. WHITE-FOOTED ANTELOPE.

Plate III.

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led: the reſt of the back is black. It has long wings covered with ſhort feathers, ſported at the beginning, like thoſe of the back; which are ſucceeded by a row of half grey and half black ones; (that is, on one ſide the ſhaft grey, on the other black:) the prime feathers being all black. The tail conſiſts of black and ſhining feathers, tipped with grey. The legs and feet are of a dark yellow inclining to grey. The Anhinga is remarkably cunning in it's method of catching fiſh; for, after the manner of ſerpents, firſt drawing up it's neck, it darts forth it's bill on it's prey, and then ſeizes it with it's claws. Willughby ſays he has taſted the Anhinga, and that it's fleſh is very little ſuperior to that of the gull.

ANI. The name of a Braziliian bird, ſomewhat allied to the parroquet kind, and very common in the woods. It is about the ſize of a thruſh, and entirely black.

ANIMAL. A being which, beſides a vegetative and generative power, qualities common alſo to vegetables, is farther endued with ſenſation, and ſpontaneous locomotion. Among the infinite variety of productions which the earth offers to our notice, Animals are therefore certainly entitled to the firſt rank; as well becauſe of the finer formation of their parts, as their ſuperior power. Compared with the vegetable world, which is fixed to one ſpot, and obliged to wait for it's accidental ſupplies of nouriſhment, Animals bear diſtinguiſhed pre-eminence, and riſe to the higheſt rank in the ſcale of created things. Far the greater part of Animals are capable of changing their ſituations, and conſequently of ſeeking that nouriſhment which is moſt agreeable to their ſtate; while vegetables are unable to correct the diſadvantages of ſituation, or to ſhield themſelves from the dangers which every object poſſeſſed of motion may bring upon them. Thoſe few Animals which are fixed to one ſpot, even in this ſeemingly helpleſs ſituation, are nevertheleſs protected from external injury by their ſhelly covering, which they can cloſe at pleaſure, and thus defend themſelves from aſſault. Every Animal, from the higheſt to the loweſt ranks, by ſome means or other natural to itſelf, finds ſecurity and protection from injury, by force, cunning, ſwiftneſs, or courage; but vegetables are totally unprotected, expoſed to every aſſailant, and patiently ſubmiſſive in every attack. This diſtinction, indeed, forms the barrier between the Animal and vegetable tribes: an Animal is an organized being, provided in ſome meaſure with weapons for it's own ſecurity; a vegetable is confined to a ſingle ſpot, and incapable of ſelf-defence.

But though definitions are ſcarcely neceſſary to enable the moſt ignorant to diſtinguiſh a plant from an Animal, they both poſſeſs ſo many correſponding properties, that the two kingdoms, as they are called, ſeem blended together. Hence it is often difficult to determine where the Animal life commences, and the vegetative terminates. The ſenſitive-plant, which ſhrinks from the touch, ſeems to have as much perception as the freſh-water polypus, which is poſſeſſed of a ſtill ſlower locomotive power. However, the polypus not only hunts for it's food, as moſt other Animals do, but it changes it's ſituation, and conſequently has the faculty of retreating from danger; while the ſenſitive-plant can neither quit it's place, nor receive it's nouriſhment, after the Animal plan.

However, both claſſes have many reſemblances, by which they are raiſed above the unorganized and inert maſſes of nature: both are endued with life and vigour, have their ſtates of improvement and decay, are capable of reproducing their kinds, ſeem all poſſeſſed of ſenſation in a ſuperior or inferior degree, and have their reſpective antipathies and inclinations. As all Animals are alternately ſupported by vegetables, ſo vegetables are greatly propagated by becoming a part of Animal food. Birds diſtribute the ſeeds wherever they fly, and quadrupeds aſſiſt to give them greater luxuriance. By theſe means the quantity of food, in a ſtate of nature, is kept equal to the number of the conſumers: and, that even the weakeſt Animals may find a proportionable ſupply for their wants, Providence has appropriated different vegetables to different appetites.

Again, if we compare vegetables and Animals, with reſpect to the places of their growth, we ſhall find them bearing a ſtill ſtronger ſimilitude. The vegetables produced in a dry and ſunny ſoil are ſtrong and vigorous, though not luxuriant; ſo alſo are the Animals common to ſuch a climate. Thoſe, on the contrary, which are the joint production of warmth and moiſture, are luxuriant and tender; and the Animals, aſſimilating to the food on which they ſubſiſt, are much larger in ſuch countries than in others. Thus, in the internal regions of South America and Africa, where the ſun uſually ſcorches all above, and inundations cover all below, every Animal, even the inſect and the reptile tribes, grows to a prodigious ſize: the earth-worm of America is often a yard long, and as thick as a common walking-cane; the boiguacu, the largeſt of the ſerpent race, ſometimes meaſures forty feet in length; the bats in thoſe climes are as large as rabbits; the toads bigger than ducks; and the ſpiders equal in ſize to ſparrows. On the contrary, in the frozen regions of the north, where vegetable nature is checked in it's growth, the few Animals which inhabit thoſe regions partake of the diminution; all the wild Animals, the bear excepted, are ſmaller than in the more genial climes; and ſuch of the domeſtic as are carried thither, ſoon degenerate and dwindle away in ſize. The very inſects of the arctic regions are of the minute kinds; the bees and ſpiders not being more than half as large as thoſe of the torrid zone.

The ſimilitude, however, between vegetables and Animals, is nowhere more obvious than in thoſe which belong to the ocean, where the nature of the one is admirably adapted to the neceſſities of the other. The watery element, it is well known, produces it's vegetable ſtores in great abundance, and is plentifully ſtocked with inſects which ſubſiſt upon them. Over extenſive tracts of ocean, a weed is ſeen floating, covering the ſurface, and exhibiting the appearance of a green and extenſive meadow. On the lower ſide of theſe fluctuating plants, millions of little Animals are found, which appear excellently calculated for ſuch a mode of exiſtence: for, as the plants on which they ſubſiſt lie over their heads, their feet are placed on their backs; and, as land Animals have their legs below their bodies, theſe have them placed above. At land, alſo, Animals in general are furniſhed with eyes to aſſiſt them in procuring their food; but, at ſea, almoſt all the reptile kinds are deſtitute of ſight, which might only give them proſpects of danger, without aſſiſting them to avoid it.

Thus, throughout every part of creation, there is an obvious affinity between the Animal and the vegetable kingdoms: in general, however, it may be obſerved, that the more perfect races have the leaſt

ſimilitude

ſimilitude to the vegetable productions; while, on the contrary, the meaner the Animal, the more local it is found to be, and the more it is affected by the peculiarities of the ſoil where it reſides. Numbers of the more humble reptile kinds are confined to a ſingle plant; nay, even to a ſingle leaf: on that they ſubſiſt, increaſe with it's vegetation, and ſeem to decay as it declines. Theſe are the circumſcribed inhabitants of a ſingle vegetable: if removed, they inſtantly die; being entirely aſſimilated to the plant on which they feed, partaking of it's medicinal qualities, and often aſſuming it's very colour. Hence an infinite variety of the humbler animated tribes are never ſeen but in one particular country; they are incapable of exiſting apart from their kindred vegetables, which are only the produce of certain climates. More perfect Animals, however, lead a life of leſs dependance; and ſome of the more generous kinds are found to ſubſiſt in various parts of the world at the ſame time. Yet, of all the tribes of animated nature, man, the nobleſt Animal, appears leaſt affected by the diverſity of ſoil, and the leaſt influenced by the variations of vegetable ſubſiſtence: equally unaffected by the luxuriance of the warmer climates, or the ſterility of the frozen, he has ſpread his habitation over the whole world; and finds the means of ſubſiſtence as well amidſt the polar regions, as the burning deſarts of the equator. Man, therefore, may be called the Animal of every climate, as he is neither circumſcribed to zones, nor confined to territories; but exiſts in every climate, and ſuffers but very gradual alterations from the nature of his ſituation.

As to Animals of a meaner rank, whom man compels to attend his peregrinations, theſe being habituated to live in a kind of conſtraint, and upon food often different from that of their native ſoil, ſoon alter their nature with their nouriſhment, and aſſimilate themſelves to the vegetables on which they are fed. Thus man, the lord of the creation, himſelf unaffected in any very perceptible degree, directs the nature of other Animals at pleaſure, and trains them to his uſe or his humour. In thoſe wide uncultivated wilderneſſes, where man, in his ſavage ſtate, poſſeſſes inferior ſtrength, and the beaſts claim divided dominion, the whole foreſt ſwarms with noxious Animals and vegetables; Animals in a great meaſure yet undeſcribed, and vegetables which want a name.

The aim of man has ever been to ſubdue the earth to his own uſe; and where arts and civilization have been introduced, this is in a conſiderable degree happily effected. In a ſtate of nature, Animal life is increaſed to the greateſt quantity poſſible; in a ſtate of improvement, it is reduced to more contracted limits: but the greateſt poſſible increaſe of life would be inſufficient, were there not other Animals which ſubſiſted on Animals; and which themſelves, in their turn, are food for ſuperior Animals. Were all Animals to ſubſiſt on vegetables, thouſands of beings muſt ſoon become extinct, from a deficiency of proviſion: but, as Providence has wiſely conſtituted things, one Animal ſupports another, and thus the infinite variety of exiſtences which people the earth, are all ſupplied with food ſuited to their reſpective natures.

Human induſtry has been ſucceſsfully employed to diminiſh the number of Animals, and increaſe that of vegetables: and, if we take a comparative view of the different kinds, we ſhall find that, with reſpect to man, among the vaſt variety in the Animal kingdom, few are beneficial to him; on the contrary, in the vegetable, very few are entirely noxious. For inſtance, how ſmall a part of the inſect tribes are beneficial to man, and what numbers are inimical! In ſome countries they almoſt darken the air; a candle cannot be lighted, without their inſtantly flying round it, and extinguiſhing the flame; neither the ſleeping nor the waking hours of man are unannoyed with theſe pernicious beings; the moſt beautiful landſcapes in nature only invite their rapacity; and even the coldeſt receſſes are no protection from their aſſaults. As theſe minute Animals are injurious from their multitudes, ſo the larger kinds are equally dreadful to him from their native ferocity. In the moſt uncultivated regions, theſe maintain undiſputed empire; and man preſumes on their territories with dread and apprehenſion. Theſe Animals are either troubleſome or formidable to the human race; but there are ſtill a greater number entirely uſeleſs, and which only occupy the room which more beneficial creatures might poſſeſs, incommoding mankind rather with their numbers than with their enmities.

Thus, on enumerating the amazing variety of land Animals, which have been eſtimated at twenty thouſand, we can ſcarcely reckon up a ſingle hundred from which man derives any conſiderable benefit: the reſt are all either his open or his ſecret enemies; immediately attacking him in perſon, or intruding on that food he has appropriated to himſelf. Vegetables, on the contrary, though exiſting in a greater variety, are but few of them noxious: the moſt deadly poiſons, being properly corrected, are often of the moſt eſſential ſervice in medicine; and even thoſe plants which ſeem only to encumber the ground, ſerve for food to a race of Animals which mankind either regard with friendſhip or indifference.

Hence it will appear, that though no original ſpecies of Animal or vegetable life is entirely extinct, when man has long exerciſed dominion, and become undiſputed lord, he has exterminated his enemies in every poſſible degree, and driven them to haunts where he has not yet thought proper to purſue them Still, however, an immenſe variety of exiſtences is diffuſed around us, and it is difficult to determine where we ſhall begin to conſider them! The number of beings endued with animation like ourſelves, at firſt view, indeed, ſeems infinite. Not only the earth, the water, and the air, teem with Animals of various kinds; but almoſt every vegetable, every leaf, contains millions of minute inhabitants, each of which fills up the circle of it's allotted life, and ſome are objects of the greateſt curioſity. In contemplating this ſeeming exuberance of nature, it is not at all wonderful that ignorance ſhould lie down in hopeleſs uncertainty, and pronounce that abſolutely inſcrutable which requires much labour to particularize. The active and inquiſitive mind, however, by no means intimidated with the immenſe variety, has invented a method of numbering, grouping, and claſſing, all the various animals which fall within it's notice: and this ſyſtem, in many reſpects, has uſurped the place of ſcience; and fancied relations have induced naturaliſts to blend animals of heterogeneous natures with one another. Syſtem, indeed, may be partially uſeful, to aſſiſt the memory, and facilitate the acquirement of natural knowledge; but, when carried to the extent which ſome of the moſt eminent naturaliſts have attempted, it ceaſes to inſtruct, and

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tends only to bewilder and perplex. As ſome naturaliſts, however, have certainly attained to a conſiderable degree of excellence in claſſing animated nature, it may not be improper juſt to mention their reſpective plans, with the chief particulars in which they differ from each other. Leaving, then, the inferior orders of ſyſtematic naturaliſts, whoſe methods, in general, have only been the amuſement of a day, we ſhall briefly deſcribe the ſeveral modes of arrangement adopted by Ray, Klein, Linnæus, and Pennant.

Ray, after Ariſtotle, divides all Animals into two kinds; thoſe which have blood, and thoſe which have none: placing all the inſect tribes in the laſt claſs. The firſt grand order he divides into ſuch as breathe through the lungs, and ſuch as breathe through the gills; which laſt comprehend the fiſhes. In thoſe which breathe through the lungs, ſome have the heart compoſed of two ventricles, and others only of one. In this laſt deſcription are included all Animals of the cetaceous kind, all oviparous quadrupeds, and ſerpents: thoſe Animals which have two ventricles, are ſome oviparous, as the birds; and ſome viviparous, as the quadrupeds. The quadrupeds he then divides into ſuch as have hoofs, and ſuch as are claw-footed: the former he again diſtinguiſhes into thoſe which have the hoof undivided, thoſe which have it cloven, and thoſe which have it divided into more than two parts. Animals with the cloven hoof he divides into thoſe which chew the cud, as the cow and the ſheep; and thoſe which are not ruminant, as the hog. Animals which chew the cud he ſubdivides into four claſſes: the firſt having hollow horns, which they never ſhed, as the cow; the ſecond including the ſheep kind; the third the goat kind; and the laſt, comprehending ſuch as are furniſhed with ſolid horns, and ſhed them annually, are of the deer kind. Deſcending to claw-footed Animals, he obſerves that ſome have large claws reſembling the fingers of the human hand, which he refers to the ape kind; and others have the foot divided in two, with or without a claw to each diviſion, the former being of the camel kind. The elephant makes a genus of itſelf, it's claws being entirely covered with ſkin. The remainder of the numerous tribe of claw-footed Animals he divides into two kinds; the analogous, or ſuch as bear ſome reſemblance to each other; and the anomalous, which have eſſential differences. The analogous claw-footed Animals are of two kinds: they are furniſhed with more than two cutting teeth in each jaw, and are carnivorous; or they have only two cutting teeth in each jaw, and ſubſiſt principally on vegetables. The carnivorous kinds are divided into the great and the little. The great carnivorous Animals are ſubdivided into thoſe which have ſhort ſnouts, as the cat and the lion; and thoſe which have long and pointed ones, as the dog and the wolf. The little claw-footed carnivorous Animals differ from the great, in having proportionably ſmaller heads, with ſlenderer bodies, which qualify them for creeping into holes, in purſuit of their prey, like worms; and theſe are therefore called the vermin kind.

Klein makes the power of changing ſituations the general characteriſtic of Animals, and takes his ſeveral diſtinctions from their aptitude for ſuch a change. Some have a locomotive power by means of feet, or ſimilar appendages; others are furniſhed both with wings and feet; ſome can only change their ſituations in the water by means of fins; others move on the earth without feet; and ſome change their ſituations by moving their ſhells at pleaſure, while others move only periodically. Such as are without locomotive powers are, however, quite unnoticed. The quadrupeds which move chiefly by means of four feet on land, he divides into two orders; the firſt of which is the hoofed kind, and the ſecond the claw-footed; and each of theſe orders he ſubdivides into four families. The firſt family of the hoofed kind conſiſts of the ſingle hoofed, as the horſe and the aſs; the ſecond includes thoſe which have the hoof cloven into two parts, as the cow and the ſheep; the third, being characterized by a triple diviſion of the hoof, conſiſts only of the rhinoceros; and the fourth, in which the hoof is divided into five parts, is in like manner confined to the elephant. The clawed kind are alſo divided into families: the firſt comprehending thoſe which have but two claws on each foot, as the camel; the ſecond including thoſe which have three claws; the third, thoſe with four; and the fourth, ſuch as have five.

Briſſon divides animated nature into nine claſſes: quadrupeds; cetaceous Animals, or thoſe of the whale kind; birds, reptiles, or Animals of the ſerpent kind; cartilaginous fiſhes; ſpinous fiſhes; teſtaceous Animals; inſects; and worms. He then ſubdivides the quadrupeds into eighteen orders, and takes his diſtinctions from the number and conformation of their teeth.

Theſe ſyſtems, however, are all in a great meaſure ſuperſeded by that of the celebrated Linnæus; who, with a ſtudied brevity, and unrivalled preciſion, comprehends the greateſt variety in the ſmalleſt compaſs. According to this great naturaliſt, the firſt diſtinction of Animals is to be taken from their internal ſtructures. Some have the heart with two ventricles and hot red blood; viz. quadrupeds and birds; the quadrupeds being viviparous, and the birds oviparous: others have the heart with only one ventricle, and cold red blood; viz. amphibia and fiſhes; the amphibia being furniſhed with lungs, and the fiſhes with gills. Some have the heart with one ventricle, and cold white ſerum; viz. inſects and worms; the inſects being furniſhed with feelers, and the worms with holders. The diſtinctions of quadrupeds, or Animals with paps, as he terms them, are taken from their teeth. Theſe he divides into ſeven orders; to which he gives ſyſtematic names of his own invention. His primates, or principals, have four cutting teeth in each jaw; the brutæ, or brutes, have no cutting teeth; the feræ, or wild beaſts, have generally ſix cutting teeth in each jaw; the glires, or dormice, have two cutting teeth both above and below; the pecora, or cattle, have many cutting teeth above, and none below; the belluæ, or beaſts, have the fore-teeth blunt; and the cetæ, or thoſe of the whale kind, have cartilaginous teeth. This celebrated ſyſtem is but juſt ſketched out; as the names of the different Animals, and their reſpective claſſes, with the moſt conciſe deſcriptions of each, fill two octavo volumes.

The ingenious Pennant, who has, perhaps, given to the world the moſt accurate ſyſtem of quadrupeds that ever appeared, divides them into hoofed, digitated, pinnated, and winged quadrupeds. The hoofed quadrupeds he ſubdivides into ſuch as are whole hoofed, and ſuch as are cloven-hoofed; the digitated, into frugiferous, carnivorous, and inſectivorous, regarding at the ſame time the number of the dentes canini; the pinnated, into piſci-

vorous, and herbivorous; and the winged, which include the bats, inſectivorous.

Such are the general outlines of the moſt famous ſyſtems which have been invented to facilitate the ſtudy of natural hiſtory. Buffon, however, with no leſs truth than vivacity, has expoſed the abſurdity of ſyſtem, when applied to the works of nature; and, by the moſt beautiful diſplay of one great branch of natural hiſtory, has taught us to conceive what pleaſure might be expected from the ſtudy of the whole, executed on a ſimilar plan of elegance and preciſion.

In natural hiſtory, of all other ſciences, there is the leaſt danger of obſcurity. In morals or in metaphyſics, every definition muſt be preciſe, becauſe theſe ſciences are neceſſarily founded on definitions; but it is far otherwiſe in ſubjects where the exhibition of the object itſelf is capable of correcting any miſrepreſentation. Thus, by miſtake, a creature may be ranked among quadrupeds, which belongs more properly to the fiſh or inſect claſſes; but this can produce very little confuſion, as every reader will be able to form a ſyſtem conſonant to his own judgment, on examining the figure and properties of the Animal.

Animated nature, in general, is diviſible into five claſſes: quadrupeds, birds, fiſhes, inſects, and amphibious Animals; but, though all theſe ſeem tolerably diſtinct from each other in their very natures, there are ſome inſtances where we cannot eaſily decide whether it is a bird or a quadruped, a fiſh or an inſect, which preſents itſelf to our obſervation. Nature is varied by imperceptible gradations; ſo that no exact line can be drawn between any two claſſes of it's productions, nor can any definition be framed to comprehend them all.

Each claſs of quadrupeds may be arranged under one of the domeſtic kinds, as a model on which to form an idea of the reſt: thus we may ſay, that a tiger is of the cat kind, and a wolf of the dog kind, becauſe there are ſome rude reſemblances between them; and one who has never ſeen wild Animals will be able to form at leaſt a ſlight conception of their figures from his acquaintance with thoſe which are tame. But we dare not aſſert, with ſome ſyſtematic writers, that a bat is of the human kind, or a hog of the horſe kind, merely becauſe there is ſome trivial ſimilarity in their teeth or paps. All references of this kind, however, are merely arbitrary; and, in many caſes, it muſt be confeſſed, they are very uncertain. It is difficult to determine, for inſtance, whether the civet ſhould be claſſed with the dog or the cat kind; but the exact hiſtory of the civet being once known, it is of very little importance to what kind the different conjectures of different perſons may judge it bears the greateſt reſemblance.

Animals conſiſt of ſolids or firm parts, fluids, and matter of an intermediate nature. The ſolids are mere earth, connected together by ſome oily humour, and reducible by fire into their original ſubſtance. Thus a bone, being perfectly purged of all it's moiſture by calcination, is found to become pure earth, which the leaſt force will crumble into duſt; yet the ſame bone, on being immerged in water, will become firm and ſolid again after calcination, and conſiderably more ſo in oil than in water. Indeed, the cupels or furnaces of chymiſts made of Animal earth will ſuſtain the utmoſt effects of fire.

The fluid parts of Animals become more crude in proportion as they are nearer the lacteals and abſorbent veſſels. Chyle, for example, is little more than a vegetable juice: but, in it's farther progreſs, it gradually loſes it's vegetable characters; and, after a number of circulations, it becomes a perfect Animal juice, under the denomination of blood, from whence all the humours are derived.

Animal ſubſtances have been diſtinguiſhed from thoſe of vegetables, by two circumſtances: firſt, that the former, when burnt, are found perfectly inſipid, all Animal ſalts being volatile and evaporating with heat; whereas the contrary is experienced in vegetables, which conſtantly retain ſome fixed ſalt in all their aſhes: ſecondly, that no pure acid is contained in any Animal juice; nor can any acid ſalt be extracted from it, though theſe qualities are known to exiſt in all vegetables. Animals, however, may be converted into their vegetable nature by putrefaction.

ANIMALCULE. An animal of ſuch minute proportions, that it is ſcarcely diſcernible by the naked eye, though all nature teems with an immenſe variety of theſe creatures. Of this humble ſpecies are thoſe innumerable hoſts of inſects which people the water in the ſummer months, tinging it ſometimes with a pale or deep red colour, and ſometimes with a yellow one. The Animalcule uſually exhibits ſomething of the ſhrimp appearance, and the moſt common one is called by Swammerdam, pulex aquatica arboreſcens. Their concourſe at this ſeaſon, Dr. Derham obſerves, is for the purpoſe of propagating the ſpecies; and he adds, that theſe little inſects afford a comfortable ſubſiſtence to many water animals. The green ſcum on the ſurface of ſtagnant waters is often ſolely compoſed of myriads of another ſtill ſmaller order of Animalcules; which may probably, in their turn, be deſtined to ſupply the pulices aquaticæ with food. The invention of the microſcope has brought to light millions of Animalcules in almoſt every kind of fluid; and, in the Philoſophical Tranſactions, we meet with obſervations on the Animalcules in rain-water, in ſeveral chalybeat waters, and in infuſions of pepper, bay-berries, barley, oats, wheat, &c. Thoſe, indeed, who have made the moſt minute reſearches into the natures of the ſeveral objects ſubjected to their ſenſes, have diſcovered that the ſubſtances on which they employed their curioſity were often totally different from what they were originally apprehended. From ſuch inveſtigations it appears that the whole earth is replete with an infinity of Animalcules floating in the air we breathe, diſporting in the liquors we drink, and adhering to every object of the ſight or touch. The conjectures and hypotheſes relative to the production, generation, ſtructure, and uſe, of theſe Animalcules, invented by caprice, and adopted by credulity, have been more various and contradictory than it is eaſy to conceive. Avoiding, therefore, theſe inexplicable labyrinths, we ſhall confine our obſervations to actual diſcoveries. By the aſſiſtance of the microſcope, we not only perceive that ſuch Animalcules really exiſt, but are enabled, in ſome degree, to determine their ſhapes, and the various peculiarities of their motions. Indeed, the contemplation of known Animalcules has rendered the idea of infinitely ſmall bodies extremely familiar to all mankind. A mite was formerly thought the utmoſt limit of animated minuteneſs; but our credulity is not, at preſent, greatly alarmed, when we are told of animals even twenty-ſeven millions of times ſmaller than a mite. Minute animals appear to be proportionably ſtronger, more active,

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and vivacious, than larger ones. How infinitely does the leap of a flea exceed any thing of which greater animals are capable? How amazingly faſter than the beſt race-horſe does a mite run, in proportion to their reſpective ſizes? M. De Liſle has given the computation of the velocity of a ſmall creature, ſcarcely diſcernible by the naked eye, which he found to run three inches in half a ſecond: now, ſuppoſing it's feet to be the fifteenth part of a line, it muſt make five hundred ſteps in travelling three inches; that is, it muſt ſhift it's legs five hundred times in a ſingle ſecond, or the ordinary pulſation of an artery.

Sir John Hill has arranged Animalcules under three claſſes; namely, thoſe which have no tails, nor any viſible limbs; thoſe which have tails, but no viſible limbs; and thoſe which have viſible limbs: each of which claſſes he ſubdivides into ſeveral diſtinct genera.

Animalcules, however, may be more properly reduced to viſible, inviſible, and microſcopical. Viſible Animalcules are ſuch as are perceptible by the naked eye; of which kind we may enumerate mites, with ſeveral ſpecies of inſects, reptiles, and other vermin. Inviſible Animalcules are a race of beings neither perceptible by the natural eye, nor even by the beſt microſcopes; concerning which naturaliſts, of courſe, form many ſtrange conjectures. Reaſon and analogy, indeed, give ſome ſupport to our idea of the exiſtence of an infinitude of imperceptible Animalcules. The naked eye is adapted to the inſpection of all animals not leſs than the mite; there a new order of beings commences, reſerved for the microſcope, and comprehending all deſcriptions of creatures, from the mite to ſuch as are twenty-ſeven millions of times ſmaller: nor can this laſt order be conſidered as compleatly limited, till we ſuppoſe the microſcope arrived at the higheſt degree of perfection.

Microſcopical Animalcules are ſuch as are only perceptible by the aſſiſtance of a large magnifier; and theſe, according to ſome naturaliſts, fall moſt properly under the laſt claſs of inviſibles. The exceſſive minuteneſs of theſe Animalcules conceals them from the naked eye; and one of the moſt conſiderable improvements in modern philoſophy is the invention of thoſe inſtruments which bring ſuch creatures under our cognizance and inſpection. An object a thouſand times too minute to affect the optic ſenſe, might have ſeemed wholly excluded from our obſervation; but human ſagacity has contrived means to extend the faculty of ſight inconceivably farther. Indeed, moſt of our microſcopic Animalcules are ſo extremely minute, that, through a lens, the focal diſtance of which is the tenth part of an inch, they ſeem only like ſo many points: that is, their figures cannot be diſtinguiſhed; ſo that they appear, from the vertex of that lens, under an angle not exceeding a minute. If we farther inveſtigate the real magnitude of ſuch an object, it will be found nearly equal to $\frac{1}{100000}$ of an inch in length. Suppoſing, therefore, theſe Animalcules of a cubic figure, (that is, of the ſame length, breadth, and thickneſs) their magnitude will be expreſſed by the cube of the fraction $\frac{1}{100000}$; that is, by the number $\frac{1}{1000000000000000}$: and ſo many parts of a ſquare inch does each Animalcule in that caſe equal.

Strange as it may ſeem, it is undoubtedly true, that many thouſands of theſe Animalcules would have ſufficient room to dance on the point of a common needle: and, indeed, ſome liquids abound with ſuch amazingly minute Animalcules, that the magnitude of the whole earth is not large enough to be a third proportional to theſe diminutive floating animals, compared with a ſingle whale.

Animalcules are found of various kinds; ſome formed like fiſh, others like reptiles, ſome hexapedal, and others horned. In ſeveral kinds, however minute, it is eaſy to diſcover the form of their mouths, their proboſcides, and horns, with the motions of their hearts, lungs, and other parts. Every Animalcule being an organized body, how delicate and ſubtle muſt be the ſeveral parts which conſtitute ſuch a creature, and preſerve it's vital functions! It is difficult to conceive how, in ſo narrow a compaſs, there can poſſibly be contained a heart, the fountain of life; muſcles neceſſary to the creature's motions; glands for the ſecretion of it's fluids; a ſtomach and bowels to digeſt it's food; and other innumerable members, without which the minuteſt Animalcule could by no means ſubſiſt. As every one of theſe members, however, is alſo an organical body, they muſt neceſſarily be compoſed of parts, adapted to their reſpective actions. They conſiſt of fibres, membranes, veins, arteries, nerves, and coats, with an almoſt infinite number of fine ſmall tubes, the minuteneſs of which exceeds every effort of human imagination. But there are ſtill other parts which muſt of neceſſity be even leſs than theſe: and ſuch are the ſeveral fluids permeating thoſe fine tubes, as the blood, lymph, and animal ſpirits; the ſubtlety of which, even in large animals, is almoſt beyond conception. Lewenhoeck calculates, that a thouſand millions of thoſe Animalcules which are diſcovered in common water, do not collectively exceed the dimenſions of a ſingle grain of ſand! This author, likewiſe, on examining the male ſperm of various animals, diſcovered in many an infinitude of Animalcules, not larger than thoſe juſt mentioned. In the milt of a ſingle cod-fiſh there are more Animalcules than men on the whole earth. The foul whitiſh matter which ſticks to the human teeth abounds with Animalcules of various figures, to which vinegar is fatal; and yet vinegar itſelf ſupports a ſpecies of Animalcules which are ſhaped like eels. In ſhort, if we give full credit to this penetrating naturaliſt, every corruptible ſubſtance produces it's various Animalcules; and to theſe muſt we aſcribe the original cauſe of many diſeaſes. The itch, it is well known, from repeated experiments, is a diſorder ariſing from the irritation of a ſpecies of Animalcules found in the puſtules of that malady; whence the communication of it by contact is eaſily conceived, as well as the reaſon why a cure is effected by means of cutaneous applications. To the ſame radical cauſe, ſome have alſo attributed the ſmall-pox, the meaſles, and other contagious diſeaſes. Some, indeed, go farther, and pretend to reduce all diſeaſes in general to this principle: and a late writer, in particular, has ventured not only to account for all diſeaſes, but even for the operations of all medicines, from the hypotheſis of Animalcules. Thus the moſt beneficial or curious diſcoveries in natural philoſophy have laid the foundation for viſionary theories, and have been introduced to ſupport the moſt chimerical ſyſtems.

ANIMAL FLOWER. A name given by moſt naturaliſts to an Animal bearing ſome diſtant reſemblance to the Flower of the marigold, but of a paler yellow. This name, however, ſeems well adapted to the Animal; for it's claws, or tentacula, being

being diſpoſed in regular circles, and tinged with a beautiful variety of bright lively colours, very nearly repreſent the petals of ſome of the moſt elegantly fringed and radiated Flowers; ſuch as the carnation, marigold, and anemonie.

ANIMALS, AMPHIBIOUS. A term generally applied to ſignify ſuch animals as are capable of living either on land or in the water; or, as ſome define it, thoſe animals which breathe the air, but paſs part of their time in the water, as affording them their chief food. The word Amphibious is derived from the Greek Amphi, Both; and Bios, Life; from their being qualified to exiſt both on the earth and in the water. Such are the frog, caſtor, otter, tortoiſe, ſea-calf, alligator, &c. Moſt of the Amphibious kind, the caſtor and otter excepted, have peculiarities in their ſtructure to fit them for ſituations ſo importantly different; particularly, in the heart, lungs, foramen ovale, &c. In ſome of theſe animals, (the frog and tortoiſe, for example) the heart has but one cavity, with an artery to receive the blood coming out of it, and a vein to convey it thither. In others, the foramen ovale appears to be ſtill open for the paſſage of the blood from the vena cava to the arteria venoſa, without the help of breathing. In the caſtor diſſected by the academiſts of Paris, though the foramen was not found actually open, the marks of it appeared; and the cauſe of it's being cloſed up might well enough be accounted for, from the animal's having been long kept out of the water. In the otter the caſe is different; there being no appearance of any thing like a foramen, ſo that the creature is under a neceſſity of occaſionally riſing above water to take in air.

The ſtructure of the feet of the caſtor at once pronounces it Amphibious; the fore-feet being formed like thoſe of ſuch terreſtrial animals as hold their food in their feet; while the hind-feet are faſhioned after the manner of river-fowls, with webs or membranes between the toes.

Many of the fly kinds may be ſaid, in one ſenſe, to be Amphibious. Gnats drop their eggs in water; where their young are hatched, and live and breathe after the manner of fiſhes: till, at length, undergoing a metamorphoſis, they take wing, quit their native element, and become inhabitants of the air. Even ſwallows are by ſome writers ranged under this claſs, from the idea that they have been known to paſs the winter aſleep under water, whence the warmth of the ſpring has awakened and called them forth.

The term Amphibious is ſometimes alſo extended to men who have the faculty of living a long time under water. We have many inſtances of ſuch Amphibious men; the moſt remarkable is that of a Sicilian, named the Fiſh Colas; whom, Kircher relates, by long habitude from his youth, had ſo accuſtomed himſelf to live in water, that his nature ſeemed to be quite altered, and he lived rather after the manner of a fiſh than of a man.

Buffon, however, has conſiderably, and perhaps juſtly, narrowed the claſs of Amphibious animals. The ſole animals, ſays this great naturaliſt, to which we can apply this name, in all the rigour of it's acceptation, are the ſeal; the morſe, or ſea-calf; and the manati, or marine ox: becauſe theſe are the only ones in which the foramen ovale in the heart remains always open, and conſequently the only ones which can live without reſpiration as well in the air as in the water.

Dr. Hunter obſerves that, properly ſpeaking, there are no Amphibious animals; for that fifth cannot live long without air, though much longer than men.

Elias Geiſsler has written expreſsly on Amphibious animals; and Mr. Ottwald, of Dantzick, has left behind him anatomical obſervations on the ſame ſubject.

ANOCYSTI. The name of a claſs of the echini marini, which have the aperture of the anus at the apex of the ſhell. Some of theſe approach to a hemiſpheric, or ſpheroidal figure; while others are more flat, and bear no inconſiderable reſemblance to a ſhield.

ANOLE. A ſpecies of lizard common in the Weſt Indies, where it infeſts the houſes and plantations. It is about the ſize of the common European lizard, but it's head is longer. It's ſkin is of a yellowiſh hue; and it's back is variegated with green, blue and grey lines, running from the head to the tail. It takes ſhelter in a hole during the night, where it makes a continued and diſguſting noiſe; but in the day-time it crawls abroad, and is conſtantly in motion.

ANOMIA. A family of ſhells whoſe characteriſtic is, that they are bivalve, and unequivalve; having one valve perforated near the hinge, by which perforation they are affixed to ſome other body.

This family has long been known in a foſſil ſtate, and contains a great number of ſpecies; but few of them have been particularly deſcribed by naturaliſts, the reſt being yet undiſcovered recent from the ſea.

Columna firſt remarked ſome foſſil ſpecies; and, not finding theſe ſpecies mentioned by conchologiſts as ſhells, gave them the appellation of conchæ rariores Anomia; which term Anomia is now become the ſtandard name of the family. Several ſucceeding naturaliſts conſidered them merely as foſſils; and it is only within the laſt thirty years that any recent kinds have been diſcovered.

Gualtieri, indeed, gives the figures of three recent kinds, and has made a particular genus of them, which he calls terebratula. However, he defines them very erroneouſly, as ſhells with equal valves, and diſſimilar ſides, of a peculiar conſtruction, inſtead of a beak having a perforation, and alſo a ſingular articulation or connection internally. The celebrated Linnæus, in his genus of Anomia, has mixed the recent with the foſſil kinds; deſcribing them as ſhells with unequal valves, one valve being flattiſh, and the other convex; the beak perforated, and the hinge inarticulate or toothleſs.

A few recent ſpecies only being yet diſcovered, it is impoſſible to be very accurate in the deſcription of them. It is, however, pretty evident, that the valves of the Anomiæ are connected together in two different ways; and that, inſtead of ſaying they are ſimply inarticulate, they may more properly be deſcribed as being ſome joined by an inarticulate hinge, and others by a multarticulate one. The firſt ſet have no teeth or joints on the hinge; but the upper valve is always indented into a wide opening of the larger or under valve, in which it plays like a joint when the exigences of the animal require it to be opened or ſhut; and the ſecond ſet have a viſible and regular multarticulate hinge, reſembling the multarticulate cockle.

From a conſideration of the depth of the grooves, the indentings, and undulated margins, of theſe ſhells, and of their beaks, which are perforated or tubular

tubular quite within the ſhell, it appears highly probable that theſe animals receive their nouriſhment through their tubes or perforated beaks only, and that they ſeldom or never have occaſion to open their valves. Indeed, the ſituations in which they are found, and particularly their internal ſtructures, ſeem to indicate that the ſhells are not adapted for frequent opening.

This curious family of ſhells may be divided into two genera; the inarticulate, and the multarticulate. In the inarticulate Anomiæ, the hinge of the under valve forms a large cavity, the corners of which make two prominences or joints; and the upper valve is indented into it by a prominency correſponding with the cavity, and by two ſmall depreſſions anſwering to the two prominences or joints. In the multarticulate Anomia the hinge lies in a long ſtraight line, and is ſet with many teeth.

The Anomia has the habit of an oyſter, to which it is often found affixed by a ſtrong tendinous ligature. The larger ſpecies yet diſcovered meaſures about two inches diameter; the ſmaller is about the ſize of a cockle.

The foſſil ſpecies of Anomiæ are uncommonly numerous in Great Britain; where they are found in chalk-pits, and in lime-ſtone and other quarries.

ANSERES. One of the ſix orders of birds in the Linnæan ſyſtem; the characteriſtic diſtinctions of which are, a ſmooth beak, covered with ſkin, gibbous at the baſe, and enlarged towards the apex; the jaw denticulated, and the tongue fleſhy; the feet adapted to ſwimming, having thin toes connected by a membrane; the legs thick and ſhort; and the body bulky and plump, covered with a thin ſkin, and feathers. This order of birds is analogous to the belluæ in the claſs of mammalia.

ANT. A genus of inſects belonging to the Linnæan order of hymenoptera; diſtinguiſhed from the other genera of this order by having an erect ſquama, or ſcaly body, placed between the thorax and the abdomen.

Theſe inſects have been famous from all antiquity for their ſocial and induſtrious habits; for their ſpirit of ſubordination; and for being offered as a pattern of parſimony to the profuſe, and of unremitting diligence to the ſluggard. More recent experiments, however, and more accurate obſervations, convince us that much of their boaſted frugality and precaution is fictitious. The treaſures they lay up are no longer ſuppoſed to be intended for future proviſion; and the choice they make in their ſtores appears not to be dictated by any very extraordinary ſagacity. It is, indeed, ſomewhat ſurprizing, that every writer of antiquity, every poet, and every moraliſt, ſhould deſcribe this inſect as labouring only in the ſummer, and feaſting on the produce of it's toils during the winter. Perhaps, in ſome of the gentler climates, where the winter is mild, and of ſhort continuance, this may be the caſe; but in France, England, and other northern countries, theſe animals can have no occaſion for a ſupply of winter proviſions; being actually, during that ſeaſon, in a ſtate of abſolute torpidity.

The common European Ants are, in general, either red or black, and they are of various magnitudes. Some of them are furniſhed with ſtings, and others are wholly deſtitute of them: ſuch as have ſtings uſe them for their defence; and ſuch as are unprovided with theſe weapons have a power of ſpurting from their poſteriors an acid pungent fluid, which inflames and irritates the ſkin like nettles. The body of the common Ant conſiſts of three diviſions; the head, breaſt, and belly. In the head are placed the eyes, which are extremely black; and under the eyes are two ſmall horns or feelers, compoſed of twelve joints, all covered with a fine ſilky hair. The mouth is compoſed of two crooked jaws, which project outwards; in each of which appear inciſures reſembling teeth. The breaſt is covered with a fine ſilky hair, from which project ſix legs, pretty ſtrong, and reſembling hair, having the extremities of each armed with two ſmall claws, which aſſiſt the animal in climbing. The belly is redder than the reſt of the body, which is rather of a brown cheſnut colour, ſhining like glaſs, and covered with extremely fine hair. From this formation, the Ant ſeems bolder, and more active, than any other creature of the inſect tribe of the ſame ſize; and, indeed, it poſſeſſes ſufficient intrepidity to attack an animal often more than ten times it's own magnitude.

No ſooner is the winter paſt, than the Ant-hill, which before ſeemed a deſart, again ſwarms with renovated life; and myriads of theſe inſects are ſeen juſt awakened from their annual lethargy, and preparing for the enjoyments and the toils of ſummer. During the firſt day of their appearance, they never offer to quit the hill, which may be conſidered as their citadel, but run over every part of it, as if to examine it's preſent ſituation, and obſerve what injury it has ſuſtained from the inclemency of the weather while they were aſleep.

At their firſt appearance none but the wingleſs tribes are to be ſeen, thoſe furniſhed with wings ſtill remaining at the bottom of the hill. The working or neutral Ants, which firſt appear, are always deſtitute of wings; while the male and female Ants, which are each furniſhed with four large wings, are more dilatory in riſing from their dormant ſtate. Thus, like bees, which they extremely reſemble in their œconomy, the Ants are divided into male, female, and the neutral or working tribes. Theſe are all eaſily diſtinguiſhed from one another; the females being conſiderably larger than the males, and the labouring Ants ſtill ſmaller than either. The two former generally have wings, but the latter never have any; and theſe laſt perform all the labours which contribute to the welfare and preſervation of the commonwealth. The female may alſo be diſtinguiſhed by the ſtructure and colour of her breaſt, which is a little browner than that of the neutral Ant, and brighter than that of the male. In eight or ten days after their firſt appearance, the labours of the hill begin to be in ſome forwardneſs: the males and females appear mixed with the drudging multitude, and are active in traverſing their boundaries, and ſportively purſuing each other. They ſeem in no reſpect to partake of the toils of the ſtate, but are rather employed in amorous dalliance; the males purſuing the females with great alacrity, and apparently forcing their compliance. In the act of coition they remain united for ſome time, during which the males ſuffer themſelves to be drawn about at the pleaſure of the females. In the mean time, the working body of the ſtate have no participation in theſe enjoyments, nor concern themſelves with the amorous tribes: they are employed in diligently making excurſions from the hill in purſuit of food for themſelves and their aſſociates; and in

providing proper materials to afford a comfortable retreat for the young, and add to the ſecurity of the whole commonwealth.

In England, Ant-hills appear formed and arranged with very little regard to order or regularity; but, in the more ſouthern provinces of Europe, they are conſtructed with amazing ingenuity, and ſeem replete with contrivance and ſagacity. They are generally formed in the vicinity of ſome large tree, on the banks of a pleaſant ſtream; the former for the purpoſe of ſecuring food, and the latter for ſupplying them with that abundant moiſture which is requiſite for the uſe of theſe animals. The ſhape of the Ant-hill is that of a ſugar-loaf; being about three feet high, and compoſed of leaves, bits of wood, ſand, earth, gum, and grains of corn. Theſe are all united into a compact body, perforated with galleries down to the bottom, and having a variety of meandering ways in different parts of the ſtructure. From this habitation to the water, as well as to the tree, there are many paths worn by conſtant aſſiduity, along which the ſedulous inſects are ſeen continually paſſing and repaſſing; ſo that, from the commencement of the warm ſeaſon, they are conſtantly employed till the unpropitious weather again ſuſpends their exertions, and terminates their annual induſtry.

The working Ants are not only employed in ſuſtaining the idlers at home, but in providing ſufficient food for themſelves. They ſubſiſt on various proviſions, both of the animal and vegetable kinds; killing and devouring all ſuch inſects as are of inferior ſtrength, and ſeeming remarkably fond of ripe fruits, and every ſpecies of ſweet. Having met with any fruit, or other large ſubſtance, they devour what they can; and, tearing the reſt in pieces, load themſelves with the ſpoil. When they meet with an inſect which they are ſingly incapable of maſtering, ſeveral of them attack it at once; and, lacerating it's members, each Ant loads itſelf with a part of the booty: and where they happen, in their excurſions, to encounter any thing too weighty for one to ſupport, and which they cannot eaſily divide, ſeveral of them aſſiſt in forcing it along; ſome dragging, and others ſhoving. When a ſingle Ant chances to make a fortunate diſcovery, it immediately communicates the information to others, and the whole republic ſoon appear in motion. But while they are thus buſied in feeding abroad, and carrying in proviſions for the uſe of thoſe which continue inactive at home, they are by no means unmindful of poſterity. The female Ants ſoon begin to lay their eggs, which are immediately carried to the ſafeſt ſituation, at the bottom of the hill, where they are aſſiduouſly defended from every violence by the labouring tribe. Thoſe white ſubſtances, however, which are found ſo plentifully in every Ant-hill, are not the newly-depoſited eggs of the Ant, as many have erroneouſly ſuppoſed; on the contrary, the real egg of this animal is ſo very minute, that it is hardly diſcernible when even laid on a black ground. In fact, thoſe little white bodies vulgarly called Ant-eggs are the young animals in their maggot ſtate, when endued with life, and long ſince liberated; being often involved in cones which they have ſpun round themſelves like ſilk-worms. The real egg, when laid, being viewed through a microſcope, appears ſmooth, poliſhed, and ſhining; while the maggot is compoſed of twelve rings, and is in general very conſiderably larger than the full-grown Ant itſelf.

It is impoſſible to expreſs the fond attachment which the labouring Ants ſhew to the riſing progeny. In cold weather they bear them in their mouths to the very depths of their retreat, that they may be leſs liable to the ſeverity of the ſeaſon; and, when it happens to be a fine day, they remove them with the ſame tenderneſs nearer the ſurface, that the warm beams of the ſun may contribute to accelerate their maturity. If a formidable enemy demoliſhes their whole habitation, cruſhing them by thouſands in the ruin, theſe wonderful inſects, affectionately mindful of parental duties, make it their firſt care to ſave their offſpring; and, on ſuch occaſions, they may be obſerved running wildly about, in a ſtate of diſtraction, each loaded with a young one, not unfrequently as large as itſelf.

Swammerdam informs us, that he kept ſeveral working Ants in his cloſet, together with their young, in a glaſs filled with earth; and that he took pleaſure in obſerving how they dug deeper and deeper, to depoſit their eggs, as the earth dried on the ſurface; but, on pouring water over the mould, it was equally curious to ſee with what care, affection, and diligence, they laboured to place their brood in ſafety, by carrying them to the drieſt parts. The ſame author adds, that when water had been wanting for ſeveral days, and the earth was afterwards a little moiſtened, they would immediately carry their young to have a ſhare, who ſeemed to ſuck up the moiſture with pleaſure and avidity.

When the young maggot has attained to it's full proportions, the breaſt inſenſibly ſwells, it caſts it's ſkin, and loſes all motion; the ſeveral members which were before hidden then begin to make their appearance, and an aurelia is formed, which exhibits very diſtinctly all the parts of the animal; though they are yet deſtitute of motion, and wrapped up, as it were, in a ſlight covering. Having paſſed through all it's metamorphoſes, and arrived at it's proper maturity, it burſts through the ſurrounding folds, to aſſume the form it is in future to retain. This, however, is not ſolely effected by the efforts of the riſing animal, the old ones very aſſiduouſly tearing with their teeth the covering which enwraps it; without which aſſiſtance, the aurelia would be unable to emancipate itſelf, as an ingenious naturaliſt has proved by repeated experiments. The old ones not only lend them their aid on this occaſion, but actually know the preciſe time when their aſſiſtance is proper to be applied: and this, indeed, is the more neceſſary, as the young animal, if produced too ſoon, would infallibly periſh on being expoſed to the cool air; and, if too long detained in priſon, would as certainly be ſuffocated.

The female having laid all her eggs, and the whole brood being thus produced, her labours, as well as thoſe of the male, now ceaſe; and her wings, which but a ſhort time before were ſo actively employed, begin to diſappear. What becomes of her when thus diveſted of one of her diſtinguiſhing ornaments, is not perfectly known; though ſhe is uſually ſeen in the cells for ſome weeks afterwards. The males, however, having no longer any employment at home, make uſe of their wings to fly away, and never more return. It is probable that, having performed their deſtined office, they periſh with cold, or are devoured by the birds; many of which are extremely fond of this ſpecies of food. The labourers, in the mean time, having probably depoſed

depoſed their queen, and being deſerted by the males, which ſerved only to clog the community, prepare for the ſeverity of winter, by ſinking their retreats as deep in the earth as poſſible; and it is now found that the grains of corn, and other ſubſtances, with which they furniſh their hill, are meant only as fences to repel the ſeverity of the winter, and not as proviſions to ſupport them during it's continuance. It is a general obſervation, that almoſt every inſect which lives a year after arriving at it's full growth, is obliged to paſs four or five months without receiving any aliment, during which period it remains in a dormant ſtate. This being certainly the caſe with regard to the European Ants, it would be abſolutely uſeleſs for them to make proviſion againſt a ſeaſon which they cannot enjoy: and, indeed, ſo far are they from feeding in winter on the fruits of their ſummer labours, that they are totally incapable of ſtirring during all the former ſeaſon. Thus, what ſome authors have called a magazine of proviſions, appears to be no more than a bulwark, which ſerves as a common retreat when the inclemency of the weather confines them to their lethargic ſtate.

However, what has been ſaid, with ſo much exaggeration, of the European Ants, is perhaps ſtrictly true of thoſe in the tropical regions: where they conſtruct hills with amazing contrivance and regularity; laying up their proviſions with much wiſdom and foreſight; and, probably remaining active the whole year, have œconomical regulations among themſelves entirely unknown in European climates.

Reaumur, Gould, and Carre, who have made the moſt minute enquiries into the œconomy of Ants, in general agree with the relation we have given of theſe wonderful inſects.

Mr. Gould obſerves, that every different colony of Ants is compoſed of inſects of one particular ſpecies, over which a large female, to which he gives the title of queen, preſides. The queen, he endeavours to prove, is the mother of the whole brood; and is diſtinguiſhed from the reſt by her ſuperior magnitude, by the diverſity of her colour, and by that reverential awe with which ſhe is conſtantly treated by all her ſubjects. The colour of the queen ſometimes differs in different colonies. Her head reſembles that of the common Ant: ſhe has likewiſe three lucid ſpecks on her forehead, placed in a triangular form, which ſeem to be the eyes, and are of the ſame ſtructure with thoſe of the ſpider. The queen, as ſoon as ſhe has laid a ſufficient quantity of eggs, leaves them to the care of her labouring ſubjects, and withdraws to a ſeparate apartment. Two or three yellow queens have ſometimes been found in the ſame colony; and, of the red, there are ſeldom leſs than two regents. In this reſpect they both differ from the hill and ſmall black Ants, which have only one.

From the moſt ſatisfactory experiments, this ingenious enquirer into nature has evinced, that the queen alone ſupplies every particular colony with it's inhabitants; and that ſhe lays three different ſorts of eggs, viz. the male, the female, and the neutral. Theſe Ant-vermicles are very ſlow in their growth, and undergo various metamorphoſes before they arrive at a ſtate of full maturity.

Mr. Carre concurs with Mr. Gould in his general theory of Ants; and informs us, that theſe ſurprizing inſects ſwarm once a year; and that the young can build their habitations without the aſſiſtance of the old. At firſt, they ſeem ſolely attentive to the conſtruction of them; but no ſooner are they finiſhed, than ſome of the Ants proceed in ſearch of proviſions, which they lay up for their daily conſumption, and for the ſupport of the inactive part of their ſpecies, without any apparent foreſight of an approaching inclement ſeaſon.

After all, no inſect can be more laborious than the Ant, nor more perſevering; hence the very ſtones over which they paſs and repaſs will often be viſibly worn into tracks. They are ſo extremely fond of fleſh, that they will not only feed on the bodies of may-bugs and beetles; but if a frog, lizard, bird, or ſerpent, be thrown in their way, they in a few days reduce it to a ſkeleton.

Ants have many enemies among the feathered tribes, particularly wood-peckers: but the Ant-lion is, of all others, the moſt formidable deſtroyer of theſe ſedulous inſects. The Ants found in the gardens and orchards appear to be a different ſpecies from thoſe which inhabit the fields and woods, and are peculiarly inimical to the labours of the gardener. Several methods have been invented for their deſtruction: ſuch as tallow, aſhes, unſlaked lime, ſoot, oil of aſpic, ox's gall, ſaw-duſt, pounded hogs dung, and ſulphur; the fumes of which laſt article have been particularly recommended for their extirpation. The Ants, however, are not ſo prejudicial to hortulane productions as has generally been imagined; and therefore often ſuffer for the depredations of other inſects.

Bontius informs us that, in the Eaſt Indies, Ants of a reddiſh hue are ſeen flying, which collect from flowers, trees, ſhrubs, and herbs, a ſubſtance of which gum-lac is ultimately compoſed. Subſequent authors, however, are not unanimous in ſupporting this aſſertion. Geoffery obſerves, that the name Gum is improperly applied to this ſubſtance, it being rather of a cereous nature. The moſt remarkable of this ſort is ſtick-lac, brought over on the very branches whereon it is found, and which ſome have ſuppoſed to proceed from the trees themſelves: but this conjecture is evidently erroneous; for on making an inciſion in the tree, nothing of that kind would flow from it. It is therefore moſt probably a kind of comb, partaking of the nature of that formed by the bees and other labouring inſects; for, on it's parts being ſeparated, different cells appear of a pretty uniform figure; and hence it is evident that the lac is nothing but a kind of wax which forms the component parts of the comb.

Aldrovandus reports, that in Brazil there are large winged Ants, which have both a very agreeable taſte and ſmell; and their numbers are ſo immenſe, that they ſometimes appear like a cloud. The German Ephemerides informs us that, on July 18, 1679, when the weather was intenſely hot, but thick and cloudy, a flight of winged Ants was obſerved to proceed from the north-eaſt towards the ſouth-weſt; that the town of Poſen, on the Danube, was filled with them; that ſuch a vaſt number alighted in the market-place, that no one could ſtir without killing immenſe numbers of them; that their flight did not continue more than a quarter of an hour; and that, on falling, they loſt their wings, and only crept about ſlowly: and that they reſembled the common Ants, though of ſuperior magnitude, and furniſhed with two tranſparent wings.

In Africa, and particularly in Guinea, the Ants, which are of three kinds, the red, the green, and the black, are very formidable and miſchievous; and their ſting produces extreme pain. They raiſe their

their hills, which are formed of a viſcid kind of clay, to an amazing height, ſometimes from ſix to twelve feet, tapering into a pyramidal form: the habitations are conſtructed with great art; and the cells are ſo numerous and regular, that more ingenuity and induſtry is ſcarcely perceptible in the formation of a honeycomb. Theſe inſects appear to be ſubject to the ſtricteſt regulations: for, on the ſlighteſt warning, they ſally forth upon whatever object diſturbs them; and, if they can find means to arreſt their enemy, he is ſure to experience no lenity. Sheep, fowls, and rats, are often deſtroyed by theſe inſects, and their fleſh ſtript off to the very bones.

Brazil contains a variety of Ants, ſome of which are nearly as deſtructive as the termites of Africa. Their colours are various, and beautiful; and ſeveral ſpecies are furniſhed with wings. In the oriental regions, likewiſe, the numbers of Ants are prodigious; ſome being remarkably large, and of a ruddy colour inclining to ſable: they are extremely deſtructive to the fruits of the earth, as well as to domeſtic articles.

Ant Horse. The largeſt ſpecies of Ant found in Great Britain, being twice the magnitude of the common ſort. It is not only diſtinguiſhed by it's ſize, but by the blackneſs of it's head, and the duſky iron-grey colour of it's breaſt. It's legs are likewiſe an iron-grey; and the ſcale between the body and the breaſt is of an oval figure, pointed at the top, and undivided. The body is entirely brown, and compoſed of five ſegments. This ſpecies generally harbours in hollow trees, but in it's ordinary habits differs very little from the reſt of the genus.

Ant, Red. This inſect, which is of inferior ſize to the common Ant, has a very ſmall head, and a broad breaſt in proportion to it's body. The ſcale is ſlightly dentated, and nearly circular; the legs are ſlender; the wings extremely fine, and of a browniſh hue. It frequents dry paſtures, and is often found on the leaves and ſtalks of the humbler plants.

Ant, Black. The black Ant is of a middle ſize between the horſe and the red ſpecies. It's head is large in proportion to it's body, and it's breaſt ſomewhat depreſſed. The ſcale is of an oval ſhape, having it's edges entire; and the legs are longer and more ſlender than in the other ſpecies. This Ant abounds in heaths and large dry plains.

Ant, American. The common Ants of America are very large and voracious. They are furniſhed with two crooked teeth, which meet each other like nippers, and with which they cut the leaves of trees and other ſubſtances on which they ſubſiſt. A colony of theſe creatures ſometimes ſtrip a ſtately tree of it's foliage in a ſingle night, carrying away great part of the leaves to feed their young. When they arrive at full maturity, they ſhed their external coats, like flies on quitting their caterpillar ſtate, and then become winged inſects, under which form they depoſit their eggs; excavating their retreats in the earth to a great depth, and conſtructing their neſts with wonderful ingenuity. They carry on continual hoſtilities with every other ſpecies of inſects; and when they rove abroad in bodies, which is always once a year, they penetrate every corner of the houſes in their vicinity, and deſtroy whatever inſects they contain.

Ant, American Velvet. A very elegant inſect about the ſize of the hornet, the body being beautifully marked with black and crimſon ſpots of a velvet gloſs. The breaſt is extremely ſtrong and hard, and will bear a conſiderable preſſure without material injury. The ſting of this ſpecies inflicts a wound which occaſions extreme pain and inflammation.

ANT-EATER, or ANT-BEAR. A genus of animals of which there are ſeveral ſpecies: the diſtinguiſhing characteriſtics are, that the body is covered with hair, the mouth ſmall, and the tongue, which is long and cylindric, calculated to ſupply the want of teeth.

Among the many animals which prey on ants, none are ſo deſtructive to that indefatigable race as thoſe which go under the appellation of Ant-Bears or Ant-Eaters; and which, though conſiderably different in ſize and figure, agree in the peculiar length and ſlenderneſs of their ſnouts, their ſingular appetites, and the manner of ſeizing their prey.

Theſe have been claſſed by Buffon into the larger tamandua, the ſmaller tamandua, and the Ant-Eater; we ſhall, however, follow the more accurate diviſions of Pennant, who diſtinguiſhes this genus of animals into the Great, the Middle, the Striped, and the Leſſer Ant-Eater.

In reviewing the hiſtory of this genus of animals, it is obſervable, that the ſnout is ſo diſproportionate to the reſt of the creature, that it's length makes near a fourth part of the whole. Though the horſe has as large a head as almoſt any other European animal, the Ant-Eater has one twice as long in proportion to it's magnitude. The ſnout of this animal is almoſt round and cylindrical, extremely ſlender, and ſcarcely thicker near the eyes than at it's extremity. The mouth is very ſmall; the noſtrils are cloſe ſet; the eyes are little; and the neck is ſhort. The tongue, which is long and ſlender, is generally doubled up in the mouth, and is the only inſtrument by means of which the animal finds a ſubſiſtence; as the whole of this tribe are entirely deſtitute of teeth, and derive their ſafety principally from the remoteneſs of their retreats. Indeed, if we carefully ſurvey the various parts of the earth, we ſhall find that the moſt active, and moſt ſprightly, as well as the moſt beneficial quadrupeds, have been placed contiguous to man, and have been either made ſubſervient to his pleaſures, or have maintained their independence by their vigilance, their cunning, or their ſtrength; and it is only in the remoteſt ſolitudes that we are to look for the helpleſs, the deformed, and the monſtrous births of nature. Theſe wretched animals, being incapable of defending themſelves either by their ſtrength or cunning, eaſily become a prey to others which poſſeſs ſuperior agility or fortitude; and, therefore, they retire for ſafety into the darkeſt foreſts, or the moſt deſerted mountains. From this obſervation, it may naturally be ſuppoſed that the Ant-Eater, a creature ſo helpleſs and deſtitute that it's legs are too ſhort to accelerate it's flight, and which poſſeſſes no natural arms for defence, is neither very numerous, nor often ſeen. It is principally found in the new world, though it is alſo ſometimes diſcovered in the old; but, in whatever country the animal is met with, it always chuſes the woods for it's retreat, and conceals itſelf under the withered leaves. From this aſylum it ſeldom ventures, as the induſtry of an hour ſupplies it with food to ſupport exiſtence for ſeveral days. The manner of it's procuring it's prey is one of the moſt ſingular which natural hiſtory furniſhes. It lives, as it's name implies, entirely on

on ants and inſects of a ſimilar nature, which are found in the greateſt abundance throughout thoſe countries which give birth to this animal. In theſe climates the ants live in large communities, and frequently raiſe their hills to a very conſiderable height. When this animal approaches them, it creeps ſlowly forward on it's belly, uſing every precaution to keep itſelf undiſcovered till within a convenient diſtance of the place where it intends to make it's banquet; then ſtretching itſelf lengthwiſe on the ground, it thruſts forth it's round red tongue, which is often two feet long, acroſs the path of theſe induſtrious inſects, ſuffering it to remain motionleſs for ſeveral minutes together. The ants of theſe regions, ſome of which are half an inch long, conſidering it only as a piece of fleſh accidentally thrown in their way, ſwarm upon it in great numbers, but are immediately entangled; the tongue of the Ant-Eater being covered with a ſlimy fluid like bird-lime. When the Ant-Eater perceives it's tongue covered with a ſufficient number, it inſtantly draws it in, and devours them: and continues to act in the ſame manner till it's appetite is fully gratified; when it again retires to it's hiding-place, where it remains in a ſtate of inactivity as long as hunger will permit.

Such is the luxurious life of the Ant-Eater; a creature, of all others, apparently the moſt helpleſs. However, it finds ſafety from it's enemies in the privacy of it's retreat; and, in ſome neighbouring ant-hill, an ample ſupply of all it's wants. As it's chief aim is to avoid it's purſuers, it is ſeldom diſcovered: but, when driven to an extremity, though deſtitute of teeth, it will fight with it's claws; and it has often been known to oppoſe the dog, and even the jaguar, with ſucceſs. It throws itſelf on it's back, faſtens on it's enemy with all it's claws, and adheres with ſuch ſtrength and perſeverance, that even after death it does not relinquiſh it's hold for a conſiderable time.

ANT-EATER, GREAT. This animal has a long ſlender noſe, ſmall black eyes, and a round ſhort mouth. The tongue, which is about thirty inches long, lies double in the mouth. The legs are extremely ſlender, having four toes on the fore-feet, and five on the hind; and the two middle claws on the fore-feet are very large, ſtrong, and hooked. The hair on the upper part of the body is black mixed with grey, and about ſix inches long; a black line, bounded above with white, extending from the neck, acroſs the ſhoulders, to the ſides. The fore-legs are whitiſh, and marked above the feet with a white ſpot: the tail, which is about a foot in length, is covered with very long coarſe black hair. That beautiful ſpecimen in Sir Aſhton Lever's Muſeum, which is ſuperior to any ever yet deſcribed, is ſeven feet four inches long; it's tail is two feet nine inches; and it's height is exactly two feet.

This ſpecies of the Great Ant-Eater inhabits Brazil and Guiana; it moves very ſlowly, but is capable of ſwimming acroſs the largeſt rivers. It is, however, ſo fearful of rain, that when expoſed to a ſhower it uſes it's long buſhy tail for a covering. This animal, as well as every ſpecies of ant-eaters, brings forth but a ſingle young one at a time; and, on theſe occaſions, the female is ſo extremely fierce, that nothing which gets within her fore-feet is able to extricate itſelf. Even the American panther is often unequal to the combat; for ſhould the Great Ant-Eater find an opportunity of embracing it, ſhe fixes her talons ſo deeply in it's ſides, that ſhe ſeldom quits her hold till after the death of her adverſary. The Great Ant-Eater ſleeps by day, and preys by night. It's fleſh, which has a ſtrong diſagreeable taſte, is eſteemed excellent food by the Indians.

ANT-EATER, MIDDLE-SIZED. This, like the other ſpecies of ant-eaters, has a long ſlender noſe, ſomewhat incurvated; a little mouth; and ſmall black eyes. The ears are alſo ſmall and upright; it has four claws on each of the fore-feet, and five on thoſe behind. The hair is of a pale yellow colour, hard and ſhining; and a black line croſſes the ſhoulders on each ſide of the neck, and meets at the extremity of the back. The tail, which is ten inches long, is taper, and covered with long hair; and the length of the body is nineteen inches. It inhabits Brazil and Guiana; and, in it's manners and inſtinct, exactly correſponds with the Great Ant-Eater. It is, however, capable of climbing trees, faſtening itſelf to the branches by it's tail.

ANT-EATER, STRIPED. This is an uncertain ſpecies; but is generally deſcribed thus: the noſe is long and tapering; the upper mandible is conſiderably longer than the lower; the eyes are extremely minute; the ears are round and ſhort; the fore-feet are furniſhed with five toes; the tail is covered with long hair of an equal length; and the body is marked with longitudinal broad black ſtripes, the reſt being of a tawny colour. The tail, which is annulated, is likewiſe tawny; and the belly is of a dirty white. The length of this ſpecies hardly exceeds one foot; and the tail is more than half the length of the whole body. Guiana appears to be it's native place, where it's fleſh is eſteemed delicious food.

ANT-EATER, LESSER. The Leſſer Ant-Eater has a conical noſe, with a downward incurvation; the ears are ſmall, and almoſt obſcured by the face; the head, limbs, and body, with the upper part of the ſides and tail, are cloathed with long ſoft ſilky hair, or rather wool, of a yellowiſh colour, inclining to brown. It has two hooked claws on the fore-feet, the exterior of which is conſiderably the largeſt; and it has four claws on the hind-feet. This animal meaſures about ſeven inches and a half in length, excluſive of the tail, which is upwards of eight inches long, thick at the baſe, partly naked, and tapering to a point. It alſo inhabits Guiana, and poſſeſſes the power of climbing trees in ſearch of a ſpecies of ants which affix their neſts to the branches.

Another ſpecies of the Leſſer Ant-Eater has been diſcovered at the Cape of Good Hope, and in the Iſle of Ceylon; having four toes on the fore-feet, and pendalous ears, which ſeem to diſtinguiſh it from other kinds. Kolben, in his Hiſtory of the Cape, informs us, that they are toothleſs; that if they faſten their claws in the ground, no man poſſeſſes ſufficient ſtrength to diſengage them; and that they protrude their clammy tongues, which they inſert into the ants neſt, and draw it into their mouths, together with the inſects which adhere to it. Mr. Strachan, in his Account of Ceylon, deſcribes an animal to which the natives give the name of talgoi, or ant-bear, after the ſame manner. It is therefore an unqueſtionable fact, that theſe animals, though more rare, exiſt in the old world as well as in the new.

ANT-LION, or FORMICA LEO. If we conſider this inſect in it's different ſtages of exiſtence, we ſhall find it equally wonderful in all. In it's reptile ſtate, however, it is eſſentially different from

all others; and, in that ſtate, it will be amuſing to purſue it's hiſtory. The Ant-Lion, previous to it's becoming an inhabitant of the air, is of the ſize of a common wood-louſe, but ſomewhat broader. It has a pretty long head, and a roundiſh body, which narrows imperceptibly towards the tail. The colour is a dirty grey, ſpeckled with black; and the body is compoſed of ſeveral flat rings, which fall over one another. It is furniſhed with ſix feet, four of which are fixed to the breaſt, and two to the neck. The head is ſmall and flat; and, in the front, there are two little ſmooth horns, or feelers, about a quarter of an inch long, which are hard, and incurvated at the ends. At the baſis of the feelers are two black quick eyes, by which it can diſcern the minuteſt objects. To this form, ſo contemptibly minute, and ſo ill provided for the purpoſes of rapacity, this animal unites the moſt ravenous appetite. But, to mark it's imbecillity ſtill more; as other animals have wings or feet, to enable them to approach their prey, the Ant-Lion is totally deſtitute of whatever aſſiſtance might be derived from either. It has, indeed, a kind of legs; but theſe only allowing a retrograde motion, it is abſolutely impoſſible for the Ant-Lion to move forward. Thus, famiſhed and rapacious as it ever appears, it's prey muſt accidentally fall within the ambuſcade provided for it, or the inſidious aſſaſſin would inevitably be ſtarved to death. Nature, however, bountiful to all her productions, though ſhe has denied ſtrength and ſwiftneſs to this inſect, has endued it with cunning; ſo that no animal fares more luxurioufly, without ever moving from it's retreat. For this purpoſe it ſelects a dry, ſandy ſoil, near the foot of a wall, or under ſome convenient ſhelter, in order to carry on it's machinations ſecure from the rain. Inſtinct, indeed, ſeems to point out ſuch a ſpot as the moſt proper habitation for it, ſince a heavy damp earth would entirely defeat it's exertions. When it begins it's labour, by digging a hole for the purpoſe of enſnaring it's prey, it bends the hinder part of it's body, which is pointed; and in this poſition works backward, forming, after ſeveral attempts, a circular furrow, which ſerves to mark out the ſize of it's intended hole. Within this firſt furrow it digs a ſecond; then a third; and afterwards others, which are always of leſs dimenſions than the preceding. Theſe preliminary operations being finiſhed, it begins to deepen the cavity, ſinking lower and lower into the ſand, which it throws with it's horns or feelers towards the margin; till, by repeated efforts, it is formed into a circle round the edge of the pit. This hole always repreſents a perfect circle; and the pit itſelf reſembles the inſide of an inverted funnel. When the Ant-Lion is newly hatched, the firſt pit it ſinks is of very ſmall dimenſions; but, as the inſect grows larger, it increaſes the ſize of it's retreat; which is deſtined, like a pit-fall, to entrap it's prey, and is generally about two inches deep, and nearly as much in diameter. This being effected, the inſidious Ant-Lion lies in ambuſh, concealing itſelf under the ſand in ſuch a manner that it's two horns encircle the bottom of the pit, the exterior part of which is compoſed of the moſt looſe and crumbling materials; ſo that it is almoſt impoſſible for any inſects which have once fallen into it, to creep out again. Conſcious of the ſucceſs of it's ſtratagem, the Ant-Lion remains in patient expectation of it's prey, and ready to avail itſelf of any accident which may throw ſome unſuſpecting little animal into it's power. Should an ant, a wood-louſe, or a caterpillar, approach too near the edge of the precipice, the ſand inſtantly gives way, and the unfortunate inſect tumbles to the bottom of the pit, where it inevitably meets deſtruction. The fall of a ſingle grain of ſand gives notice to the wakeful murderer at the bottom of the cave; which never fails to ſally forth in expectation of it's prey. Sometimes, however, the ant or wood-louſe is too nimble for it's purſuer; and recovers the margin of the pit-fall before the Ant-Lion can lay hold of it: in which caſe, the animal has another contrivance, more extraordinary than the former; for, by means of it's broad head and feelers, it poſſeſſes the power of throwing up a ſhower of ſand, which falls on the ſtruggling captive with tremendous weight, and precipitates it to the bottom. When the inſect is thus overpowered, no efforts of it's own can poſſibly releaſe it: the Ant-Lion inſtantly ſeizes it with it's hollow feelers; and, darting them both into it's body, ſucks out the juices with amazing rapacity. The prey of the Ant-Lion being thus reduced to a ſkeleton, it next proceeds to remove the dead carcaſe from it's cell, leſt it ſhould alarm other inſects, and prevent their near approach; taking up, therefore, the waſted trunk with it's feelers, and throwing it with prodigious ſtrength at leaſt ſix inches from the verge of it's den, it ſets about repairing the injuries ſuſtained in the recent conteſt. Nothing can abate it's induſtry, or check it's rapacity: patient, vigilant, and aſſiduous, it will continue on the watch for more than a month, expecting the approach of it's prey; and, ſhould the quantity exceed the calls of nature, the little voracious creature will quit the inſect it has recently killed, and leave it half conſumed, in order to attack any other which may happen to come within it's reach. Like ſavage birds and beaſts of prey in general, which are capable of enduring abſtinence longer than the gentler tribes, it ſupports hunger for a period really aſtoniſhing. La Hire, of the Academy of Paris, obſerved, near a century ago, that the Ant-Lion could faſt for ſeven months together; and to him we are indebted for the firſt notice of this ſurprizing inſect, which was ſoon afterwards ſo well deſcribed by Valliſnieri and Poupart.

When the Ant-Lion has ſpent about twenty months, and ſometimes near two years, in the ſtate laſt deſcribed, it aſſumes another form, and forgets it's rapacious appetites, but not it's induſtry. It no longer digs pits to enſnare the unwary; but furrows up the ſand all round in an irregular manner, teſtifying thoſe workings, and violent agitations, which moſt inſects exhibit previous to their metamorphoſes. Theſe animals are produced in autumn; and, at the end of winter, they are found of all ſizes: from which circumſtance, it appears that they do not uniformly arrive at maturity within the ſame ſpace of time, but experience their transformation at different ages. When this change approaches, if the inſect finds it's little cell convenient, it remains ſatisfied: but if it is obliged to remove, it entirely conceals itſelf under the ſand it has raiſed up, where it ſpins a thread, after the manner of the ſpider; which, being formed of a glutinous ſubſtance, and humid from the moiſture of it's body, adheres to the little particles of ſand among which it is ſpun, and the inſect rolls up the whole into a ball, itſelf forming the centre. This ball is about half an inch in diameter, and the inſect preſerves an apartment within ſufficiently capacious for all it's motions. The external ſurface

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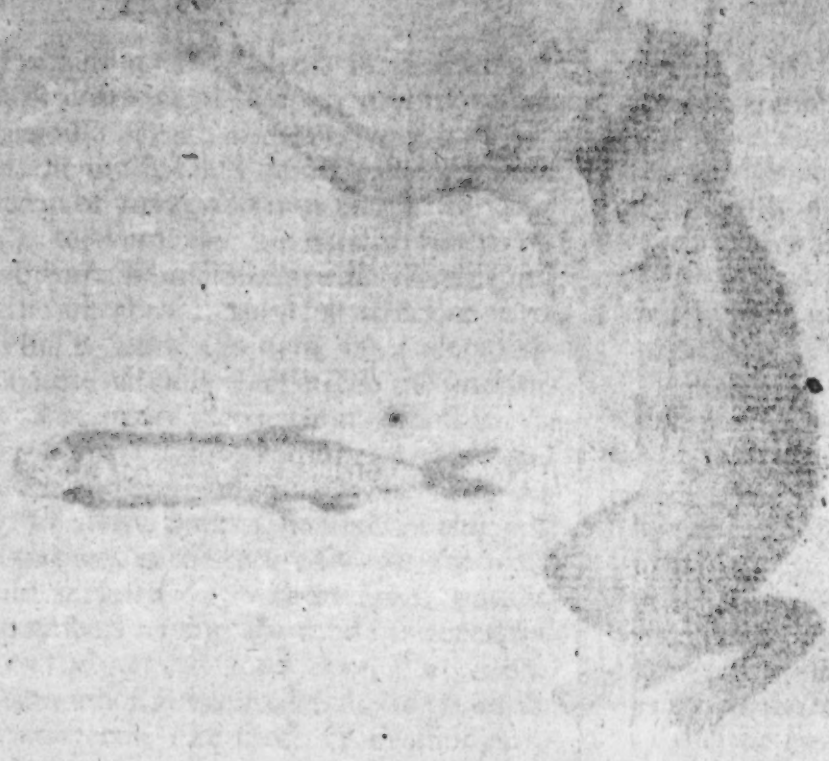

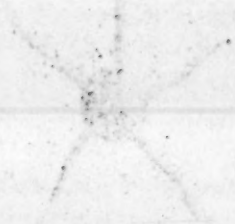

BRUSSEL
9 MEI 1964
MUSEUM

1. ANT-EATER FLY. 2. LARGE APE, OR OURANG OUTANG. 3. PIGMY APE. 4. TUFTED APE. 5. ARCTIC BIRD.

6. ARGENTINE. 7. ARMADILLO. 8. LIZARD AST. 9. TEN-RAYED AST.

Plate IV.

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is compoſed of ſand and ſilk blended; the internal of ſilk only, of a fine pearl colour, extremely delicate and beautiful. But though the work is ſo curious within, the outſide has only the appearance of a plain lump of ſand; and thus eſcapes the notice of ſuch other voracious animals as might be tempted to diſturb the incloſed gueſt. In this inactive ſtate the inſect continues ſix weeks or two months, gradually loſing it's eyes, it's feelers, it's feet, and it's ſkin; all which are left in the interior apartment. The inſect then appears almoſt in it's winged ſtate, a thin ſkin only enfolding the wings, which ſeem to be merely a thin liquid dried on the outſide. The little animal, however, being yet too delicate and tender to venture from it's retreat, ſtill continues incloſed for a ſhort time; but, at length, it's members having acquired the neceſſary conſiſtence and vigour, it tears open it's priſon, and breaks through the external wall. To effect this, it has two teeth, like thoſe of graſhoppers, with which it eats through and enlarges the aperture, till it finds it ſufficiently capacious to admit it's eſcape. The body, which is turned like a ſcrew, occupies only a quarter of an inch in length; while the wings, which ſeem confined within the ſmalleſt limits, ſoon begin to unfold, and now appear longer than the whole body. In ſhort, it becomes a large and beautiful animal of the libellula ſpecies, called the Ant-Eater Fly.

ANT-EATER FLY. This inſect is large, remarkably ſwift in all it's motions, and fierce and deſtructive in a degree not inferior to that of the reptile from which it derives it's origin. It frequents the meadows and buſhes in France and Italy during the latter part of ſummer, and is ſo exceedingly rapacious, that it ſeizes on every thing which comes in it's way. The head is of a cheſnut colour; the eyes are large and green; and the antlers, which are compoſed of twenty-four joints, growing larger to the tip, are of a deep brown. The feelers, of which there are four in number, are long and duſky; the jaws are yellow, hard, and ſharp; and the two tuſks are brown. The trunk is of a greyiſh brown, with a gilt variegation; the ſcutcheon is blueiſh; the body, which is inelegant, is of a pearly deep grey; the lines, or rings, are black; the air-holes are fringed round with brown; and the legs are ſhort, compact, and ruddy, with long dark hairs. The wings are grey; each of the ſuperior ones being marked with four ſpots of a duſky brown, and there are likewiſe two on each of the inferior. The nippers at the tail are corneous and cheſnut-coloured.

ANTACÆUS. A term applied by Strabo to expreſs the ichthyocolla piſcis, or the iſinglaſs-fiſh; and afterwards uſed by Johnſon and others, not only to ſignify this fiſh, but the common ſturgeon likewiſe.

ANTALIUM. A ſmall ſea ſhell of a tubular form, whence it is alſo denominated tubulus marinus. The Antalium, ſometimes written Antale, is about an inch and a half in length, being of the thickneſs of a large quill at one extremity, and of a ſmall one at the other. This ſhell, which is fluted from end to end, is of a greeniſh white colour, and is found as well on rocks as at the bottom of the ſea. It poſſeſſes the qualities of an alkali; and was anciently held to be of conſiderable medicinal uſe.

The Antalium bears a ſtrong affinity, in it's origin, conformation, and uſes, to the dentalium.

ANTELOPE, or GAZELL. A ſpecies of animals which can neither be referred to the goat nor the deer race, though partaking of the nature of both.

The diſtinguiſhing characters of this tribe of animals (of which ſome naturaliſts enumerate more than forty ſpecies, though Buffon makes them only twelve) are theſe: their horns are differently conſtructed from thoſe of the deer and goat tribe, being annulated, or ringed round, at the ſame time that there are longitudinal depreſſions running from the baſe to the apex. They have bunches of hair on their fore-legs; a ſtreak of black, red, or brown, running along the inferior parts of their ſides; and three ſtreaks of whitiſh hair on the internal ſides of their ears. Theſe are general characters; but, beſides theſe, there are ſeveral others which they are commonly found to poſſeſs, and which are obvious to every beholder.

Like the goat, and unlike the deer, they never ſhed their horns, have a gall bladder, and delight more in feeding on ſhrubs than graſs. On the other hand, they are like the roe-buck in ſize, as well as in delicacy of conformation; they have deep pits under the eyes, like that animal; and reſemble it in the nature and colour of their hair, as well as the bunches on their legs, which only differ in being on the fore-legs of the Antelope and on the hind-legs of the roe-buck. They ſeem, therefore, to be of a middle nature; an intermediate link between the goat and the deer; whence it is difficult to pronounce where the goat ends and the deer begins.

Moſt of theſe animals inhabit the torrid regions; thoſe parts, at leaſt, of the temperate zone which lie ſo near the tropics as to form a doubtful climate. It is, however, remarkable that, notwithſtanding the warmth of South America is well ſuited to their nature, not a ſingle ſpecies of Antelope has ever been diſcovered in any part of the new world. Their native countries ſeem, therefore, to be Aſia and Africa; where they multiply prodigiouſly, and their ſpecies are very numerous. Almoſt every ſpecies of the Antelope have the following general agreements: they are all animals of an active and elegant make, of reſtleſs and timid diſpoſitions, extremely vigilant, of great vivacity, and remarkably ſwift and nimble.

The eyes of the Antelope are ſo extremely brilliant, and at the ſame time of ſuch a mild aſpect, that the oriental poets compare the eyes of their miſtreſſes to thoſe of this quadruped. Nor can it appear ſtrange that ſuch a compariſon ſhould be reckoned the height of gallantry among the eaſtern nations; when we reflect that the Greeks, thoſe maſters of literature, taſte, and elegance, thought it no inelegant compliment to reſemble the eyes of a beautiful woman to thoſe of a cow.

The Antelope is, in general, more delicate and finely limbed than the roe-buck; it's hair is as ſhort, but it is finer and more gloſſy. It's hind-legs, like thoſe of the hare, are longer than the fore ones, which not only give additional ſwiftneſs, but greater ſecurity, in aſcending and deſcending precipices; a practice in which it greatly delights. It's ſwiftneſs is equal, if not ſuperior, to that of the roe; though the latter bounds forward, while the Antelope runs along in one uninterrupted courſe. The greateſt number of ſpecies are brown on the back, and white under the belly, with a black ſtripe ſeparating thoſe colours. The tail is of va-

rious

rious lengths, but always covered with pretty long hair; and the ears, which are beautiful and well placed, terminate in a point. The hoof is cloven, like that of the ſheep; and the horns are perennial, thoſe of the female being conſiderably ſmaller than the male's. Indeed, on comparing the Antelopes one with another, we find very inconſiderable variations between them. The turn or magnitude of the horns, the different ſpots in the ſkin, or diverſities of ſize, conſtitute the principal marks by which the ſeveral ſpecies are diſtinguiſhed; for their mode of living, habits, and peculiar ſwiftneſs, fall under one general deſcription.

Antelopes being inhabitants of the more ſunny climes, greatly contribute to add beauty to thoſe foreſts which are perpetually green. They are often ſeen feeding in herds on the ſides of the mountains, or the ſkirts of the woods, and fly all together on the ſlighteſt intimation of danger. Indeed, they run with ſuch amazing ſwiftneſs, and are ſo extremely timid, that dogs or men uſually purſue them in vain. They traverſe, with ſafety and facility, thoſe precipices which would be wholly impaſſable by every other quadruped except the goat; nor can any animals, not of the winged tribe, by any means exceed them in ſwiftneſs. On this account, they are commonly purſued by falcons; and that curious method of hunting forms one of the moſt favourite amuſements among the grandees of the eaſt.

The Arabians, Perſians, and Turks, carefully breed up, and train for this purpoſe, that ſpecies of hawk, which we call the gentle falcon. The hunter ſallies forth on horſeback, among the woods and mountains, with one of theſe falcons perched on his right-hand, preſerving the moſt profound ſilence; and the dogs, with which he is alſo attended, are taught to hang behind; while the attendants, mounted on fleet courſers, look out for game. When they perceive an Antelope at a diſtance, they direct the falcon's eye to the ſpot, and animate it to purſue. It immediately flies with incredible ſwiftneſs to the animal; which, apprized of it's danger, endeavours to eſcape, but generally without effect. The falcon, on overtaking it's prey, fixes one talon into the animal's cheek, and the other into it's throat: on this the wounded Antelope increaſes it's ſpeed; but the falcon uſually makes it's attack with ſuch ſucceſs as to prevent the animal's running far, clinging with the moſt reſolute perſeverance to it's prey, nor ever quitting it till it falls. The hunters then approach, and at once ſeizing the Antelope, and diſengaging the falcon, reward the latter with the blood of the ſpoil. They alſo apply young falcons to the throat of the dead animal, for the purpoſe of early accuſtoming them to fix on that particular place; ſince, were the falcon to attack any other part of the Antelope, either on it's back or haunches, the animal would eaſily eſcape among the mountains, and thus both would be irretrievably loſt.

Nor is this the only method by which theſe fleet and wary animals are ſubdued. The ounce, a carnivorous and ſavage creature, is trained for this purpoſe, to ſit on horſeback behind the hunter; where it remains with the utmoſt compoſure till he gets ſight of the prey. It then exerts all it's arts, and all it's fierceneſs; not darting precipitately on the Antelope, but turning and winding about till it comes within the proper diſtance; when, ſwift as lightning, it darts on the incautious animal, kills it inſtantaneouſly, and riots on the blood. But if the ounce happens to miſs it's aim, it returns to it's place without attempting an ineffectual purſuit, and ſeems aſhamed of the failure of it's artifice.

There is ſtill another way of taking the Antelope; but which ſeems neither ſo certain, nor ſo amuſing, as either of the former. An Antelope being bred up tame, is taught to join it's own kind the moment it ſees them. When, therefore, the hunter diſcovers a herd of Antelopes together, he contrives to fix a nooſe round the horns of the domeſtic animal, ſo that if any of the wild ones merely touch it with theirs, they are ſure to be entangled; and, thus prepared, he ſends it among them. The tame animal no ſooner approaches the wild herd, than the males ſally forth to oppoſe it; and, butting with their horns, are caught in the nooſe. In this condition they ſtruggle together till both fall to the ground: when the hunter comes up; and, diſengaging the tame animal, kills or ſecures the other.

But notwithſtanding all the artifice of man, and the ingenuity he diſplays in theſe ſeveral modes of deſtruction, the Antelope is extremely difficult to be caught. Continually expoſed to alarms from beaſts of prey as well as man, and ſeemingly conſcious of the number and the artifice of it's enemies, it places it's principal dependence for protection on the nature of it's ſituation, and chiefly reſides in the moſt ſolitary and inacceſſible places.

Antelope, Common. The Common Antelope is ſomewhat inferior in ſize to the fallow-deer, but reſembles it in all the proportions of it's body. It is furniſhed with upright horns ſpirally twiſted, and encircled almoſt to the top with prominent rings; the horns being about ſixteen inches long, and twelve inches diſtant from point to point. The colour of this animal is brown mixed with red, and duſky; it's belly and the inſides of it's thighs are white; and it has a ſhortiſh tail, black above, and white beneath. The female of this ſpecies is deſtitute of horns.

This animal is a native of Barbary. It's horns, before they are ſeparated from the ſcull, are not much unlike the figure of the ancient lyre; and, indeed, it appears, from ſeveral antique gems, that the ſides of that inſtrument were frequently made of the horns of animals.

Antelope, Blue. The colour of this animal, while it ranges it's native woods, is a fine blue; but, after death, it changes to a blueiſh grey mixed with white. The horns are twenty inches long, ſharp pointed, taper, and bending in an arch backwards; they are marked with twenty prominent rings, but become perfectly ſmooth towards the points. This ſpecies, which is ſomewhat longer than the common buck, is covered with long hair, that on the belly being white. The tail is ſeven inches long; and, beneath each eye there is a large white mark. From the length of it's hair, and the conſtruction of it's horns, this animal ſeems to connect the genus with that of the goat. It inhabits the interior parts of Africa; and is called by the Dutch at the Cape of Good Hope, the blawme bock, or blue goat.

Antelope, Ægyptian. The horns of this animal are ſtraight, ſlender, and annulated. They are near three feet long; and the ſpace between their tips is fourteen inches. They have a black triangular ſpot at the baſe, bounded on each ſide with white; and, in the centre of the face, there is a ſimilar ſpot, beſides two others which fall from the eyes

eyes to the throat, forming a junction with that in the face by a lateral band of the ſame colour. A black line extends from the neck to the loins, compoſed of hairs longer than the reſt; the neck, back, and ſides, are of a dark grey; and the breaſt and belly are a lively white. The tail, which is about two feet long, is terminated with long black hair. This ſpecies is about the ſize of a buck; and ſeems moſt attached to the plains; inhabiting Egypt, the Cape of Good Hope, Perſia, Syria, Arabia, and India. The Dutch at the Cape diſtinguiſh it by the name of the chamoiſe.

ANTELOPE, ALGAZEL. This antelope is deſcribed by Buffon to be of a red colour, having the breaſt and buttocks white: the horns are long, ſlender, and upright, bending internally towards the top; and ſometimes they are extremely full of annulations, though on others of the ſame ſpecies there are very few. This beautiful creature inhabits Bengal, Lybia, Egypt, and ſome other tropical countries. It runs with amazing agility up the ſteepeſt precipices, but in the plains it's pace ſeems conſiderably retarded. It is very difficult to be caught; but when once accuſtomed to a domeſtic ſtate, it becomes remarkably tractable. Some naturaliſts ſuppoſe this to be the antelope leucoryx of Oppian, of which two drawings are preſerved in the Britiſh Muſeum; but there are certainly ſome material variations, though probably not ſufficient to conſtitute a diſtinct ſpecies.

ANTELOPE, BEZOAR or PASEN. This animal, in it's general figure and conformation, reſembles thoſe antelopes already deſcribed, except that there is a ſmall variation in it's horns; and that it has ſeveral qualities and diſpoſitions peculiar to itſelf. It never ventures in the plains, but inhabits the moſt inhoſpitable and rocky mountains; particularly thoſe of Perſia: it is, however, not unfrequently found in Egypt and Arabia. This antelope is one of thoſe animals famous for producing the Bezoar, a concretion formed in the inteſtines or ſtomach, which was once held in the higheſt reputation for it's fancied medicinal virtues. This ſtone is generally found from the ſize of an acorn to that of a pigeon's egg; it's value increaſing in proportion to it's magnitude. It was formerly ſold at a moſt extravagant price: but the general diffuſion of ſcience (over the European countries, at leaſt) has taught mankind to inveſtigate it's real qualities; which appearing to have been greatly magnified by credulity, the value of Bezoar is of courſe now much decreaſed. It is ſometimes of a blood colour, and at others of a pale yellow, and all the intermediate ſhades. It's ſurface is generally ſmooth and gloſſy; and, on being broke, it emits a fragrant ſmell like ambergris, which probably originates from the aromatic food on which the animal ſubſiſts. The uſe of Bezoar, however, is now almoſt univerſally exploded by judicious phyſicians; though it ſtill retains it's ſuppoſed value in thoſe regions where the knowledge of nature is not far advanced. Experience, indeed, has not only convinced mankind in general that few cures are to be aſcribed to this ſubſtance; but, on the contrary, that it even proves fatal to the animal from which it is produced. Theſe kind of concretions, however, do not appear to be peculiar to this creature alone; they are found in almoſt every tribe of animals, the carnivorous kinds excepted; and evidently ariſe from the practice of licking off their hair, which grows into balls, in the inteſtines, of the ſize and nature already deſcribed.

ANTELOPE, HARNASSED. This ſpecies of antelope is a native of Senegal, principally frequenting the plains and woods. It's colour is a deep tawny; and it's ſides are moſt curiouſly marked with two tranſverſe bands of white interſected by two others from the back to the belly. On the rump are three white lines pointing downwards on each ſide; and it's thighs are ſpotted with white. The tail is only ten inches long, and covered with long rough hairs. The ears are broad; and the horns, which are ſtraight, are nine inches long, pointing backwards, with two ſpiral ribs. The Dutch at the Cape of Good Hope give this animal the title of the bonte bock, or ſpotted goat.

ANTELOPE, AFRICAN. This animal, which is about eighteen inches high, is of a moſt elegant and beautiful form. The horns are ſtraight, ſlender, ſharp-pointed, ſlightly annulated at the baſe, and about three inches long. In the middle of the head, between the horns, is an upright hairy tuft; and on both ſides, between the ears and the noſe, are deep cavities, containing a yellow, oily fluid, which coagulates into a ſtrong-ſcented ſubſtance, ſomewhat between the muſk and the civet. This being collected, the liquid again flows out and coagulates. Some have ſuppoſed this to be the tears of the animal; but as the cavities containing the fluid have no communication with the eyes, we cannot ſubſcribe to this opinion.

The colour of the neck and body of this animal is brown, with a ſlight tinge of yellow; the belly is white; and the tail, which is black above, and white beneath, is ſhort. The females are diſtinguiſhed by being deſtitute of horns.

ANTELOPE, INDIAN. This animal is about five feet high, thick-bodied, and ſtrongly made; but poſſeſſed of ſlender legs in proportion to it's magnitude. The horns are thick and ſtraight, marked with two prominent ſpiral ribs, for a conſiderable way from the baſe, but ſmooth towards the points. The head is of a reddiſh hue; the forehead is broad; and the noſe is pointed. On the forehead grows a line of long looſe hairs; and, on the inferior part of the dewlap, a conſiderable tuft of duſky hair. A ſhort black mane extends from the head quite to the tail. The reſt of the body is of a blueiſh grey colour, ſlightly tinged with red. The tail is ſhort, covered with ſhort aſh-coloured hair, and terminated by a large tuft of long black hairs. The females of this ſpecies (to which the Hottentots give the name of emphophos) have horns like thoſe of the males.

The Indian Antelope alſo inhabits the ſouthern parts of Africa, and appears to have a ſtrong predilection for the mountainous parts of that country. Being naturally fat and fleſhy, it is ſlow-paced, when compared with many of the antelope race; and, conſequently, falls an eaſier prey to the hunters, who greatly eſteem it's fleſh.

ANTELOPE, ROYAL. The Royal Antelope, called alſo the Chevrotin, or Little Guinea Deer, is perhaps the ſmalleſt and moſt beautiful of all cloven-footed quadrupeds. It's legs, when thickeſt, are not much larger than a gooſe-quill. It is about nine inches in height, and fourteen in length from the point of the noſe to the inſertion of the tail. It's ſhape is delicate beyond deſcription; and it appears like a ſtag in miniature, except that the horns of the male (for the female has none) are hollow, and annulated like thoſe of the antelope tribe. It has broad ears; and, having two canine teeth in the upper-jaw, differs in that

reſpect from all other animals of the goat and deer kind, and therefore ought ſyſtematically to form a diſtinct genus of itſelf. The colour of this animal, which is commonly a fine yellow, (except the neck and belly, which are white) is no leſs beautiful than it's figure is pleaſing. It's hair is extremely ſhort, and poſſeſſes a charming gloſs.

The Royal Antelope is a native of Senegal, and the hotteſt climates of Africa. It is remarkably nimble for it's ſize, bounding over a wall twelve feet high with the greateſt facility. It's ſwiftneſs, however, does not always protect it; the negroes frequently overtake it in the purſuit, and kill it with their clubs. When domeſticated, which is eaſily effected, it becomes entertaining and familiar; but ſuch is the extreme delicacy of it's conſtitution, that it cannot endure tranſportation from it's native ſoil.

Antelope, Indostan. This animal is a native of the moſt diſtant parts of the Mogul's dominions. It chews the cud; lies down and riſes after the manner of camels; and makes a kind of croaking noiſe nearly reſembling that of a deer in rutting time. This antelope grows to about four feet in height, and has a large lump on it's ſhoulders ſomewhat reſembling that of the Indian ox. The horns are ſeven inches long, projecting forward; and the neck, which is peculiarly ſtrong, has likewiſe a bend forwards like that of the camel, on the top of which is a ſhort mane. It's poſteriors reſemble thoſe of an aſs; and the tail, which is about twenty-two inches long, is terminated with long hairs. It's legs are ſlender; and, on the lower part of the breaſt, the ſkin hangs looſe like that of a cow. It's hair is ſhort, ſmooth, and commonly of a light aſh-colour, though duſky in ſome parts; the lower part of the breaſt, and under the tail, is white; and on the forehead there is a black ſpot in the form of a diamond.

Antelope, White-Footed. This animal meaſures upwards of four feet to the top of the ſhoulders, and nearly the ſame in length from the bottom of the neck to the inſertion of the tail. It's horns, which are ſhort, project a little forward; and it's ears are large, and marked with two black ſtripes. It has a ſhort black mane, extending half way down it's back; and a tuft of long hairs on the fore-part of it's neck; above which is a large white ſpot; another on the cheſt between the fore-legs; a third on each fore-foot; and two on each hind-foot. It's tail is pretty long, and tufted with black hairs. The colour of the male is a dark grey; but that of the female a pale brown. The female is deſtitute of horns, but has a mane, tuft, and ſtriped ears, like the male. This animal inhabits the interior parts of Indoſtan, and is ſometimes brought down to the Britiſh ſettlements by the natives, as a great curioſity. Some of the White-footed Antelopes have been imported into England; where, notwithſtanding the ſurprizing difference of climate, they have been known to breed and thrive ſurprizingly. During the reign of Aurengezebe, theſe beautiful creatures were much eſteemed for the diverſion they afforded in hunting. According to Bernier, that warlike prince, when on a journey, uſed to incloſe them within nets; which, being gradually drawn within narrow limits, the king and his grandees entered the circle, and diſpatched them with ſpears and other weapons: and this, indeed, is a very common method of deſtroying wild beaſts in many oriental countries.

The White-Footed Antelopes, when habituated to a domeſtic life, are in general extremely docile, and expreſs a peculiar affection for thoſe who feed them: ſometimes, however, they are very vicious and formidable. In their natural ſtate, the males fight with the utmoſt ferocity. They drop on their knees at a diſtance from each other, and in that attitude commence their approaches; ſpringing forward, when ſufficiently near, with incredible animoſity.

Antelope, Red. The Red Antelope is about four feet long, and two feet three inches high. The horns are about five inches and a half in length, and ſlightly annulated at the baſe; the ears are conſiderably longer than the horns; and the hair, which is ſtiff and gloſſy, is in every part of a reddiſh colour, but paleſt on the cheſt. This ſpecies inhabits Senegal and the Cape of Good Hope, where it greatly abounds, and is eſteemed very excellent food.

Antelope, Swift. The length of this animal is about three feet ten inches; and the height two feet ten inches. The horns are round, eight inches long, and reverting at their extremities. This ſpecies of antelope varies in colour, but is in general tawny: the lower part of the ſides, the belly, the rump, and the thighs, are white; and it has alſo a white ſpot on the fore part of the neck. It is a native of Senegal, and is reckoned the ſwifteſt of this race of animals, as it's name imports.

Antelope, Striped. The length of this animal is nine feet; and it's height four. The body is long and ſlender; and the legs are peculiarly delicate and fine. The face is brown, marked with two white lines proceeding from the corner of each eye, and uniting above the noſe. The colour of the body is generally reddiſh, with an admixture of grey. It has a white ſtripe along the top of the back, extending from the ſhoulders to the tail; and from this ſeven others branch out, four pointing towards the thighs, and three towards the belly. The breaſt and belly are grey; on the upper part of the neck is a ſhort mane; and there are a few hairs hanging down from the throat to the breaſt: the ſituation, number, and direction, however, of theſe ſtripes, from which this creature receives it's name, have been obſerved to vary. The tail is about two feet long, brown above, white beneath, and black at the extremity. The Striped Antelope is ſaid to poſſeſs uncommon agility; and the height of it's leaps is really beyond conception. It is a native of the country of the Caffres, where it is called coedoes.

Antelope, Flat-Horned. This animal, the kevel of Buffon, is the ſize of a roe-buck, having very curious horns, flatted on the ſides, and containing from twelve to fourteen rings. The colour of the ſuperior part of the body is a reddiſh brown; the inferior part, and buttocks, are white; along the ſides the two colours are divided from one another by a ſtrong duſky line; and on each knee is a tuft of hair. This ſpecies is gregarious, and inhabits Senegal. It is eaſily domeſticated, and it's fleſh is agreeable.

Antelope, White-Faced. The White-Faced Antelope is ſuperior in ſize to the fallow-deer. The length of the animal is upwards of five feet, and the height, to the ſummit of the ſhoulders, is three feet. It's horns, which are ſimilar to thoſe of the flat-horned antelope, are ſixteen inches long, five between tip and tip; annulated in the male, but ſmooth in the female. It's face, and the ſpace between the horns, are both of a pure lively white; the cheeks and neck are of a fine bright bay; the back is cinereous, blended with red, having a dark

ſtripe

ſtripe along the middle; the ſides, flanks, and ſhoulders, are of a deep brown, a broad band of a darker colour dividing them from the belly, which is wholly white, as well as the rump, and a ſmall ſpace above the tail. The tail itſelf, which is about ſeven inches long, is covered with coarſe black hairs, extending four inches beyond the ſtump. This ſpecies of antelope inhabits the countries north of the Cape of Good Hope; and a beautiful ſpecimen is preſerved in Sir Aſhton Lever's Muſeum.

Antelope, Chineſe. The length of this animal is about four feet and a half. It's horns are nine inches long, of an opaque yellow colour, reclining backwards, with their points bending towards one another, and annulated almoſt to their extremities. The head is rather clumſy; the noſe is obtuſe; the ears are ſmall and ſharp-pointed; and on the middle of the neck grows a conſiderable protuberance, occaſioned by the peculiar ſtructure of the wind-pipe. On the approach of winter, the hair of this animal grows long, rough, and hoary; ſo that at a diſtance it appears almoſt white; but, towards the beginning of May, it exchanges it's coat for another, which is ſhort, thick, and of a tawny hue. Theſe antelopes are very numerous in Chineſe Tartary, and on the frontiers of China and Thibet: they alſo inhabit the borders of India; and thouſands of them herd together near the Lake Baikal. They are prodigiouſly ſwift; and, when alarmed, bound near twenty yards with the greateſt facility. They are naturally ſhy and timid, frequenting dry and rocky plains; and are ſo very fearful of water, that even the moſt imminent danger cannot compel them to enter that element. During the winter ſeaſon, they herd in great numbers, but ſeparate again on the approach of ſpring. The Tartars hunt them with the utmoſt eagerneſs, and eſteem their fleſh very delicious food. Their horns form a conſiderable article of commerce, and are in high eſtimation among the Chineſe. Naturaliſts ſeem to doubt whether they have any particular voice, as they ſeldom emit any which can be regarded as natural. When young, they are eaſily tamed.

Antelope, Springing. The Springing Antelope is a very elegant ſpecies, rather leſs than the roe-buck. It's horns are ſlender, annulated half their length, and twiſted ſpirally; the ears are very long and duſky; and the tail depends to the firſt joint of the leg. The face, cheeks, throat, and part of the under ſide of the neck, are white, with a duſky line paſſing from the baſe of each horn, beyond the eyes, to the extremity of the mouth. The upper ſide of the neck, and part of the lower, as well as the back, ſides, and exterior parts of the limbs, are of a pale yellowiſh brown; the cheſt, belly, and interior parts of the limbs, are white; and the ſides and belly are divided by a broad cheſnut band, which runs down part of the ſhoulders. The upper part of the tail is white, and the lower black; the buttocks are white; and from the tail, half way up the back, there is a white ſtripe, which the animal poſſeſſes the power of contracting or expanding at pleaſure. This ſpecies of antelope inhabits the Cape of Good Hope, and receives it's epithet from the prodigious ſprings it takes on perceiving any of the human form. It migrates annually from the interior countries, and takes up it's reſidence in the vicinity of the Cape for two or three months, and then returns in troops of many thouſands, attended by numbers of beaſts of prey, which make dreadful deſtruction among them. Theſe migrations are probably owing to a deficiency of paſture, occaſioned by the exceſſive droughts to which ſome latitudes are ſubject; particularly that of Terra del Natal, where ſometimes a ſingle drop of rain does not fall during the ſpace of two or three years.

Antelope, Scythian. The height of this animal is about two feet and a half, the length four feet nine inches, and the tail is about three inches long. It's head reſembles that of a ſheep; it's noſe is very large, arched, and marked the whole length with a ſmall line; and the cutting-teeth are placed ſo looſe in their ſockets, that they move with the ſmalleſt touch. The horns of the male, which are of a pale colour, and the greateſt part of them almoſt tranſparent, are about a foot long, bending a little in the middle, the points inclining inwards, the ends ſmooth, and the reſt annulated. The females are deſtitute of horns, and extremely timid. During the ſummer months, the hair of this ſpecies is very ſhort, and of a greyiſh colour, with an admixture of yellow; the ſpace above the cheeks is whitiſh; the forehead and crown are hoary, and covered with long hairs; and the under-ſide of the neck and body are white: but, in winter, the whole covering is long, rough, and hoary. Theſe animals inhabit the Arabian deſarts; and they are likewiſe found in Poland, Moldavia, and in the vicinity of the Caſpian Sea. They ſeem to have a peculiar predilection for the moſt dreary ſterile ſpots, where the nature of their food gives their fleſh a flavour highly diſguſting to many palates. The females generally bring forth their young in May, and only one at a time; notwithſtanding which, the numbers of theſe animals are prodigious. The young of this ſpecies are covered with a ſoft fleece, curled and waved like new-dropped lambs. Theſe animals are migratory; and, in the rutting ſeaſon, which is late in autumn, they collect in thouſands, and retire into the more ſouthern latitudes. In ſpring, they again divide into little flocks, and wander northward, continually ſhifting their reſidence. Theſe creatures are remarkable for their vigilance; and, by a kind of inſtinct, never all lie down to reſt at the ſame time: while the majority repoſe, ſome watch as centinels; and, in their turn, are ſucceeded by others thus refreſhed. By this precaution, which ſtrongly marks their ſagacity, they guard againſt the approaches of wolves, and baffle the ſtratagems of the hunters.

Though the Scythian Antelopes outſtrip the ſwifteſt courſers, they are often overtaken through timidity and ſhortneſs of breath. While running, they ſeem to incline to one ſide, and ſcarcely to touch the ground; but no ſooner does a dog give them the ſlighteſt wound, than they inſtantly tumble down, without the leaſt appearance of reſiſtance. In a ſtate of nature, they have no voice; but, when brought up tame, they utter a ſound nearly reſembling the bleating of ſheep. The heat of the ſun, reflected from the ſandy deſarts which they traverſe, renders them almoſt blind in ſummer, or at leaſt extremely ſhort-ſighted; and, of courſe, more liable to be caught. Of all animals of the kind, this ſpecies ſeems to be the moſt libidinous, and vigorous. If caught young, they are capable of being rendered very docile and domeſtic; but, when old, they become wild and untractable, and refuſe every ſpecies of ſuſtenance while in a ſtate of confinement. The hunters purſue them with guns, dogs, or black eagles trained up to this kind of falconry; and they always approach them againſt the wind, leſt theſe creatures ſhould ſmell their enemies;

enemies, and carefully avoid ſallying forth in gaudy colours, which might attract the notice of their deſtined prey, and warn them of the impending danger.

ANTELOPE, CERVINE. This is the bubalus of antiquity, and the bekker el wash of the Arabs; a moſt ſingular animal, partaking of the mixed natures of the cow, the goat, and the deer. It reſembles the ſtag in the ſize and figure of it's body, and particularly in the conformation of it's legs; but it has permanent horns like thoſe of the goat, and formed entirely like thoſe of the antelope genus. It alſo reſembles that animal in it's way of living; however, it differs widely from it in the ſhape of it's head, being exactly like the cow in the length of it's muzzle, and in the diſpoſition of the bones of the ſcull, from which ſimilitude it received it's ancient name. The head of this animal is long and narrow; the eyes are placed very high; the forehead is ſhort and narrow; and the horns, which are about a foot long, are black, thick, and annulated, the rings being remarkably large. It's ſhoulders riſe very high, and it has a kind of bunch on them, which terminates at the neck; the tail meaſures about a foot, and is tufted at the extremity. The hair of this animal is remarkably thicker at the middle than at the root; for, in all other quadrupeds, except this and the elk, the hair tapers off from the bottom to the point; but, in theſe, every hair ſeems to ſwell in the centre. The bubalus reſembles the elk as well in ſize as in the colour of it's ſkin; but theſe are the only ſimilitudes between them, the one having a very large branching head of ſolid horns, annually deciduous, while the other has black, unbranching, hollow horns, which never fall. The colour of this animal is a reddiſh brown: but it is white about the rump, the inner ſide of the thighs, and the lower part of the belly; and a dark ſpace occupies the top of the back, the front of the upper part of the fore legs, and the hinder part of the thighs. It inhabits Barbary, and probably other parts of Africa; and is alſo met with towards the Cape of Good Hope. It is a gregarious animal; gallops apparently with a heavy pace, yet making amazing progreſs; and, when it fights, it drops on it's knees, like the white-footed antelope, already deſcribed.

ANTELOPE, SENEGAL. The head and body of this animal are of a light reddiſh brown, with a narrow black liſt down the hind part of the neck; it's rump is of a dirty white; and on each knee, and above the fetlock, it has a duſky mark. The hoofs are ſmall; and the tail, which is covered with coarſe black hairs, is about a foot long. It's horns are almoſt cloſe at the baſe, but bend outwards very conſiderably a little above: towards the end they approach each other again, receding near the points, which bend backwards. In the centre they are above ſix inches diſtant, higher up only four, and ſix at the extremities. They are ſeventeen inches long, and eight in circumference at the baſe, being ſurrounded with fifteen prominent annulations, which become ſmooth and ſharp at the points. The ears of this creature are ſeven inches long; and it's head is large and clumſy, meaſuring about eighteen inches. This ſpecies inhabit Senegal, where the French call it la grande vache brune, or great brown cow.

The petite vache brune of Buffon, called the Gambian Antelope by Pennant, nearly reſembles the former in it's figure and colour, but is inferior in ſize. It's horns are differently conſtructed, being thirteen inches long, and five and a half in circumference at the bottom; they approximate each other at the baſe and extremities, but have a conſiderable curvature in the middle; and they are ſurrounded with eight or nine annulations at the baſe, but become perfectly ſmooth at the extremities.

ANTENNÆ. See FEELERS.

ANTHIA. A title by which ſome naturaliſts very improperly deſcribe the falx venetorum, or ſickle fiſh, a long anguilliform fiſh of the tænia kind.

ANTHIAS. The name of a fiſh ſomewhat reſembling the turdus or wraſſe family, of which ſome have deſcribed four ſpecies; but Linnæus, with more propriety, refers it to the labrus.

ANTHROPOGLOTTUS. An animal endowed with the power of ſpeech like a man, or having a tongue of ſimilar formation. Under this diſtinction are comprehended the parrot kind, on account of their broad, thick, and muſcular tongues, by which they are enabled to ſpeak, and to roll their meat from ſide to ſide under the edges of their bills.

ANTHROPOMORHPA. In the Linnæan ſyſtem, a claſs of animals in ſome degree reſembling the human form; under which deſignation this author includes apes, monkies, maucaucos, and bats. This appellation is derived from Anthropos, a Man; and Morphe, a Form.

ANTHUS. A name by which Aldrovandus, and ſome other naturaliſts, have diſtinguiſhed that ſpecies of the œnanthe commonly known in England by the appellation of the whin chatt.

APE. A numerous tribe of animals chiefly confined to the torrid zone, which are furniſhed with hands inſtead of paws; their ears, eyes, eyelids, lips, and breaſts, are like thoſe parts in the human race; their internal conformation alſo bears ſome diſtant reſemblance to the human; and their whole figure exhibits a picture ſufficiently mortifying to the pride of thoſe who make their perſons the principal objects of their admiration. Theſe animals have fingers and nails on their hands like thoſe of a man, but more rough and unpoliſhed; their feet are like larger hands, being divided into fingers and toes, of which thoſe in the middle are the longeſt. They are alſo extremely lively, agile, and full of frolic, chatter, and grimace; and, from the peculiar ſtructure of their bodies, they are capable of many actions peculiar to human beings. They are, in general, fierce and untractable; though ſome of them are of a milder nature, and will ſometimes ſhew a conſiderable degree of attachment, though naturally miſchievous, filthy, obſcene, laſcivious, and addicted to thieving. They inhabit the immenſe foreſts of India, Africa, and America; live in trees; and feed on fruits, leaves, and inſects. They bound from one tree to another with ſurprizing agility, even when loaded with their young, who cling cloſely to them on every appearance of danger. In general, they are gregarious, living in vaſt ſocieties, but the different ſpecies are never found intermixed. They are the prey of leopards, and other animals of the feline kind; and conſiderable numbers of them are frequently devoured by hideous ſerpents, which inhabit the foreſts, and ſometimes purſue them to the very ſummits of the trees, and ſwallow them entire. Though not naturally carnivorous, they will rob the neſts of birds purely for the ſake of miſchief,

miſchief, and deſtroy both the eggs and the young. In thoſe countries, therefore, where Apes moſt abound, the feathered tribe diſcover a remarkable degree of ſagacity; contriving their neſts with the utmoſt ingenuity, and placing them in ſuch ſituations as may render them leaſt liable to the obſervation, or wholly beyond the reach, of theſe invaders. Theſe animals, however, are very different from one another; and their numbers, and various conformations, render it neceſſary to methodize and ſubdivide the genus.

In the Ape kind, properly ſo called, we ſee the whole external machine ſtrongly impreſſed with the human ſimilitude, and ſeemingly capable of the ſame exertions: they walk erect; are without tails; and have fleſhy poſteriors, calves to their legs, and feet nearly like thoſe of men.

In the baboon kind, or ſecond diviſion, we perceive a more diſtant approach to the human form. Theſe, which generally go on all-fours, but have the power of erecting themſelves at pleaſure, have ſhort tails, long ſnouts, and are poſſeſſed of brutal fierceneſs.

In the monkey kind, or third diviſion, which are removed a ſtep farther from the human form, the ſize of the animal becomes much more diminutive, the tail long, and the face flattiſh.

Ape, Large, Ourang Outang, or Wild Man of the Woods. Names given indifferently to various animals, agreeing in one common character of walking upright, but natives of countries, and poſſeſſing proportions and powers extremely diſſimilar. The troglodyte of Bontius, the drill of Purchas, and the pigmy of Tyſon, have all received this general appellation; and, by ſome naturaliſts, they have been ranked under one general deſcription. If credit be given to the reports of many travellers, we are, under this name, preſented with a formidable animal from ſix to eight feet high; while others, of equal authority, make it no more than three or four. In this diverſity of accounts, we muſt be ſatisfied with blending the whole into one general deſcription, having no reaſon to diſpute any of their relations

The Ourang Outang, then, which of all other animals moſt nearly approaches the human form, appears to be of different ſizes; from three to ſix, ſeven, and even eight feet high: in general, however, it's ſtature ſeems to be much leſs than that of man; but it far exceeds him in ſtrength and agility. Travellers who have had opportunities of ſeeing ſeveral of theſe animals in their native ſolitudes, give ſurprizing relations of their force, their ſwiftneſs, their addreſs, and ferocity; while ſuch naturaliſts as have viewed them only in a ſtate of captivity, have chiefly admired their patient, pliant, imitative diſpoſitions, with that curious appearance and conformation which render them ſo nearly human. Several of the ſmaller ſpecies of theſe animals have occaſionally been exhibited in England; but that obſerved by Dr. Tyſon is beſt known to naturaliſts, having been deſcribed with aſtoniſhing minuteneſs and preciſion. This animal, in the deſcription of which that learned phyſician diſplayed ſo much ingenuity, was brought from Angola; having been caught in the internal parts of that country, with a female of the ſame ſpecies, who died before ſhe could be tranſported into Great Britain. The body was covered with black hair, more reſembling that of the human ſpecies than of brutes; and, in it's different lengths, it bore a ſtill ſtronger ſimilitude to that of man; for, in all thoſe parts where it is longeſt on him, it was alſo longeſt on the Ourang Outang. The face nearly reſembled that of a man; the forehead, however, being larger, and the head more orbicular: the upper and lower jaws were not ſo prominent as in monkies; but flat, like thoſe of mankind. The ears were exactly like thoſe of the human race; and the teeth bore the ſame reſemblance: the joints of the arms and legs were likewiſe the ſame as in man; and, in ſhort, the animal, at firſt view, exhibited a figure almoſt wholly human.

However, on a more minute inſpection, the variations between this creature and the human race, and the comparative imperfections of it's form, became plainly conſpicuous. The firſt obvious difference was in the flatneſs of the noſe; the next, in the lowneſs of the forehead, and the deficiency of the prominence of the chin: the ears, likewiſe, though regularly formed, were diſproportionably large; the eyes too cloſe to each other; and the interval between the noſe and mouth too extenſive. The thighs were too ſhort, and the arms too long; the thumb too ſmall, and the palms of the hands too narrow: the feet alſo had leſs the conformation and appearance of hands than at firſt glance they appeared to poſſeſs; and, if we may judge from the figure, the animal had too great a bend with it's hams. On an anatomical examination, however, a ſurprizing ſimilitude was ſeen to prevail in the internal conformation; though it differed from man in the number of ribs, having thirteen, whereas he has only twelve: the vertebræ of the neck were alſo ſhorter, the bones of the pelvis more narrow, the orbits of the eyes deeper, the kidnies rounder, the urinary and gall-bladders longer and ſmaller, and the ureters of a different ſhape.

Such were the principal diſtinctions between the internal parts of this animal and thoſe of man; in almoſt every other reſpect they were exactly the ſame: indeed, many parts were ſo much like thoſe of the human ſpecies, that it ſeemed aſtoniſhing they ſhould not be productive of greater advantages. The tongue, and all the organs of the voice, were the ſame as man's; and yet the animal was dumb; and the brain was likewiſe formed in the ſame manner as his, though the creature was deſtitute of reaſon: an evident proof, as Buffon very beautifully obſerves, that no diſpoſition of matter can conſtitute a mind; and that the body, how nicely ſoever conſtructed, is conſtructed in vain, when no ſoul is infuſed into it for the purpoſe of directing it's operations.

The back and poſteriors of the Ourang Outang, as deſcribed by Dr. Tyſon, were exceedingly hairy; and this covering was ſo thick, that the ſkin was with difficulty diſcerned: but, in front, the hair was conſiderably thinner, the ſkin every where appearing, and in ſome places being almoſt bare. When it went on all-fours, it appeared entirely hairy; but, when it ſtood erect, the difference we have juſt noticed between the back and front was immediately conſpicuous. The hair had none of that finer and ſhorter fur intermixed, which is uſually ſeen on brutes, but was wholly of one kind; except only that it was greyiſh, and a little longer, about the pubes, and on the upper lip and chin. The face, hands, and ſoles of the feet, were perfectly clear, as was alſo the greateſt part of the forehead; but, down the ſides of the face, the hair was thick, being there about an inch and a half long,

which exceeded the length of that on the body. The lines in the palms of the hands were plainly diſtinguiſhable; and, at the tips of the fingers, thoſe ſpiral ones common to man were diſtinctly marked: the palms of the hands, however, were as long as the ſoles of the feet; and the toes were of the ſame length as the fingers. The middle toe was longeſt; and the conformation of the whole foot differed eſſentially from that of the human ſpecies. The hinder-feet being thus formed, the animal often uſed them as hands; and, on the contrary, ſometimes uſed it's hands inſtead of it's feet. The breaſts appeared ſmall and ſhrivelled, but exactly like thoſe of a man: the navel, too, appeared very fair, and well diſpoſed; being neither harder, nor more prominent, than it is uſually ſeen in children.

Such is the doctor's deſcription of this extraordinary animal; to which little has been added by ſucceeding obſervers, except that the colour of the hair is often found to vary: and in that drawn and deſcribed by Edwards it was of a reddiſh brown.

A picture ſo nearly reſembling that of the human ſpecies, naturally leads us to expect a correſponding mind; and certain it is, that ſuch of theſe animals as have been ſeen in Europe, diſplay a degree of imitation beyond what any quadruped is capable of attaining. The Ourang Outang of Tyſon was a gentle, fond, and inoffenſive creature. During it's paſſage to England, it would embrace ſuch of the ſailors as paid it any particular attention with the utmoſt tenderneſs; opening their boſoms, and claſping it's arms about them. It regarded monkies, and even Apes of a lower ſpecies, with the moſt irreconcileable averſion; ſtudiouſly avoiding the place where they were kept in the ſame veſſel, and ſeemingly regarding itſelf as a very ſuperior creature. After it had for ſome time been accuſtomed to the uſe of cloaths, it became very fond of them; and would itſelf put on part without any help, carrying the reſt to ſome of the ſhip's company for aſſiſtance. It would lie in bed, place it's head on the pillow, and pull the cloaths upwards to cover itſelf, in the ſame manner as a man.

But the animal ſeen by Edwards, and deſcribed by Buffon, ſhewed a ſtill ſuperior degree of ſagacity. It walked on two legs, even when it carried a burden; it's air being always melancholy, and it's whole deportment tinctured with gravity. Diſſimilar to the baboon or monkey, whoſe motions are violent, and their appetites capricious; who are fond of miſchief, and ſubmiſſive only through fear; this animal was deliberate in it's motions, and a look was ſufficient to intimidate it. 'I have ſeen it,' ſays Buffon, 'give it's hand to ſhew the company to the door. I have obſerved it ſit at table, unfold it's napkin, wipe it's lips, make uſe of the ſpoon and fork to carry it's victuals to it's mouth, pour out it's drink into a glaſs, join glaſſes when invited, take a cup and ſaucer and place them on the table, put in ſugar, pour out tea, and leave it to cool before drinking; and all this at the ſlighteſt intimation from it's maſter, and frequently without being required.' It was docile and inoffenſive; approached ſtrangers with reſpect; and ſeemed rather to expect careſſes, than diſpoſed to offer injuries. It was particularly fond of ſugared comfits, which every one readily gave it; and, having a defluxion on the breaſt, ſo much ſweet food contributed to increaſe it's malady, and ſhorten the period of it's exiſtence. It continued in Paris only one ſummer; and, being brought to England, died a ſhort time after in London. It eat indiſcriminately of all things; but ſeemed to prefer dry and ripe fruits: it would drink wine in ſmall quantities; but gladly exchanged it for milk, tea, or any other ſweet beverage.

Such have been the habits and diſpoſitions of theſe animals when brought into Europe: but many of theſe extraordinary inſtances of docility were probably the effects of education, and we are not informed how long the inſtructions they received for this purpoſe were continued. We learn, however, from another account, that they take but a very ſhort time to arrive at a great degree of imitative perfection.

Le Broſſe bought two young ones, only a year old, of a negro; and theſe, at that early age, diſcovered an aſtoniſhing power of imitation: even then they ſat at table like men; eat of every thing indiſcriminately; made uſe of knives, forks, and ſpoons, both to eat their meat and help themſelves, with extraordinary adroitneſs and decency; and drank wine, and other liquors. When carried on ſhipboard, they made ſigns to the cabbin-boys, expreſſive of their wants; and, whenever the lads neglected attending them, they fell into violent paſſions, ſeized them by the arms, bit them, and kept them down. The male was ſea-ſick, and required attendance like a human creature: he was even twice bled; and ever afterwards, when he found himſelf diſordered, held out his arm, as deſirous of being relieved by bleeding.

Pryard relates that, in the country of Sierra Leona, in Africa, there are a kind of Apes called baris, which are ſtrong and muſcular; and, being properly trained from their youth, can even pound at a mortar, and in other reſpects act as very uſeful domeſtics. They uſually walk upright; and, going to the river for water, carry it in little pitchers on their heads; which, however, muſt be carefully taken from them at their return, as they otherwiſe let them fall, and ſet up a melancholy cry and lamentation on beholding the fragments.

La Compte gives nearly a ſimilar account of an Ape which he brought from the Straits of Molucca. It walked on it's two hind-feet, a little bent like thoſe of a dog learning to dance; and made uſe of it's hands and arms in the ſame manner as the human ſpecies. It's viſage was not more diſagreeable than that of a Hottentot; but the body was entirely covered with woolly hair of different colours. It cried like a child; and all it's external actions ſo much reſembled thoſe of the human race, and the paſſions were ſo lively and ſignificant, that a dumb man could hardly expreſs his conceptions and deſires with more effect: it had alſo that expreſſion of paſſion, or joy, which we often ſee in children; ſtamping with it's feet, and ſtriking them againſt the ground, to ſhew it's ſpirit, when refuſed any thing it greatly deſired. 'Though theſe animals,' continues La Compte, 'are very big, (for what I ſaw were four feet high) their agility is incredible. It is a pleaſure beyond expreſſion to ſee them run up the tackling of a ſhip, where they ſometimes play, as if they had a knack of vaulting peculiar to themſelves, or as if they had been hired as rope-dancers to divert the company. Sometimes, ſuſpended by one arm, they poiſe themſelves, and then turn all of a ſudden round about a rope with as much velocity as a wheel or a ſling put in motion: at others, holding the rope ſucceſſively with their long fingers, and letting their whole bodies fall into the air, they run full ſpeed from one end to the other, and come back

back again with the ſame expedition. There is no poſture they do not imitate, nor any motion they are at a loſs to perform: bending themſelves like bows; rolling like bowls, and hanging by the hands, feet, and teeth, according to the different fancies prompted by their capricious imaginations. In ſhort, ſuch is their agility, that they can fling themſelves from one rope to another, at thirty, forty, or even fifty feet diſtance.

Theſe are the habitudes and powers of the ſmaller claſs of theſe extraordinary animals; but we are preſented with a very different picture in thoſe of a larger ſtature, and more muſcular form. Thoſe we have yet deſcribed, which are ſeldom found above four feet high, ſeem to partake of the nature of dwarfs among the human ſpecies, being gentle, aſſiduous, and playful, and rather calculated to amuſe than to alarm: but the gigantic race of Ourang Outangs, ſeen and deſcribed by ſome travellers, is truly formidable; and, in thoſe gloomy foreſts where they are uſually found, they ſeem to hold an undiſputed empire. Many of theſe exceed the human race in ſtature; are poſſeſſed of ſuperior activity, ſtrength, and intrepidity; and appear to be cunning, laſcivious, and cruel. Theſe formidable rivals of mankind are found in many parts of Africa, as well as in the Eaſt Indies, Madagaſcar, Borneo, and ſome other tropical iſlands. In Borneo, in particular, the nobility courſe them as we do ſtags; and this kind of hunting is ſaid to be the favourite amuſement of the king and royal family. Their ſkins are all hairy; their eyes ſunk in their heads; their countenances ſtern; their faces tanned; and all their lineaments, though exactly reſembling thoſe of mankind, are harſh, and darkened by the ſun.

In the ſultry and deſart regions of Africa, the Ourang Outang is ſtill more formidable. Battel gives it the appellation of the pongo; and aſſures us that, in all reſpects, it reſembles a man, except in it's ſuperior magnitude. It's face is almoſt entirely human; the eyes are deep ſunk in the head; and the hair on each ſide of the viſage is extremely long, though the face itſelf is naked, and without hair, as well as the ears and hands. The body is lightly covered, and ſcarcely differing from that of a man; but the creature has no calves to it's legs, though it walks erect. It ſleeps under ſhady trees; and erects itſelf a hut, as well to protect it from the ardent heat of the ſun, as the violence of the tropical rains: it ſubſiſts entirely on fruits, and is in no reſpect carnivorous. It is poſſeſſed of greater inſtinct than any other animal of the brute creation; and, when the negroes make fires in the woods, has ſo little timidity, that it generally approaches to warm itſelf: but it does not appear to have ſufficient ſkill to keep the flame alive by throwing on freſh ſupplies of fuel. It is a gregarious animal; and, if it meets any of the human ſpecies alone, ſeldom ſhews them any mercy: it will even attack the elephant, beating it with clubs, and compelling it to retire from that quarter of the foreſt which it claims as it's own. No human art can avail to catch one of theſe dreadful creatures alive: for they are ſo ſtrong, that ten men would hardly be a match for one of them; and ſo fleet, that it is impoſſible to overtake them. None of this kind, therefore, are ever caught, unleſs when very young, and the female chances to leave them behind; and this happens but ſeldom, as they generally keep clung to the breaſt, adhering both with their legs and arms. The ſame traveller alſo ſays, that when one of theſe animals dies, the reſt cover the body with a quantity of leaves and branches.

From another traveller, the ingenious Le Broſſe, we learn that theſe animals often attempt to ſurprize the female negroes in the woods, where they forcibly detain them for the pleaſure of their ſociety, feeding them with the choiceſt fruits they can procure; and he aſſures us that he knew a woman of Loango, who had lived among theſe animals for three years. They grow from ſix to ſeven feet in height, and are endowed with prodigious ſtrength. They build ſheds for their ſhelter, and make uſe of clubs for their defence. Their faces are broad, their noſes flat, their ears deſtitute of lips, their ſkins brighter than a Mulatto's, and they are covered on many parts of the body with long tawny hair: their bellies are large and prominent; their heels flat, yet riſing behind; and they generally walk upright, though they can go on all-fours with equal facility.

From this view of the Ourang Outang, we may perceive at what an infinite diſtance the firſt animal of the brute creation is placed from the very loweſt orders of the human ſpecies! Even among the moſt ſavage nations, it is conſidered as a mere beaſt; and, in thoſe very places where we might ſuppoſe there is the ſmalleſt real difference, the inhabitants regard it with the utmoſt contempt and deteſtation. In Borneo, where this animal has been ſaid to arrive at the greateſt perfection, and to diſplay the higheſt degree of imitative excellence, the natives hunt it in the ſame manner as they purſue the elephant or the lion, it's near affinity to the human form procuring it neither pity nor protection.

The gradations of Nature in the other parts of her works are minute and imperceptible: in the tranſition from quadrupeds to fiſhes, we can ſcarcely tell where the quadruped ends and the fiſh begins; in the deſcent from beaſts to inſects, we can hardly diſtinguiſh the ſteps of the progreſſion; but, in the aſcent from brutes to men, the line is ſtrongly drawn, well marked, and deciſive. In vain the Ourang Outang may reſemble man in form, or may poſſeſs the power of imitating his actions; it ſtill continues a wretched, helpleſs creature, pent up in the moſt gloomy parts of the foreſt; and, with regard to any provident proviſion for it's own accommodation or happineſs, it appears greatly inferior to the elephant, or beaver, in ſagacity. To unenquiring mankind, indeed, this animal may appear much wiſer than it really is. Accuſtomed to eſtimate the ſagacity of all actions by their ſimilitude to our own, regardleſs of their aptitude to the animal's way of life, we are charmed with the humble imitations of the Ape, even while we are convinced by our ſenſes that they are far from contributing to the felicity of it's ſituation. An Ape, or a quadruped, when under the trammels of human education, may be an admirable object for our curioſity; but the creature is very little profited, by all it's learning, in the advancement of it's own felicity: on the contrary, it has been always remarked, that theſe long-tutored animals have a melancholy in their air, ſufficiently expreſſive of the wretchedneſs of their ſituation, and which indicates the ſolicitude of their minds. The marks of ſeeming ſagacity are merely relative to us, and not to the animal itſelf; and all it's boaſted wiſdom is entirely the effect of our own tuition.

Another circumſtance relative to this animal ought not to be diſregarded: there is great reaſon to believe that the moſt perfect of the kind, like the reſt of the quadruped creation, only owe their erect attitude to human education. Almoſt all the travellers who mention them, ſpeak of their going on all-fours;

fours; though, as their chief reſidence is among trees, they are without doubt ſeen erect while climbing: but it appears highly probable that, when they employ every effort to eſcape, they make uſe of the united aids of their hands and feet. Schouter, who mentions their education, tells us that they are caught in traps, and taught to [illegible] their hind-legs; which cer[illegible] nion to be, that they walk on [illegible] tural ſtate: and, on exami[illegible] hands, and the ſoles of th[illegible] equally callous and beaten, [illegible] that both have been equally uſed. In thoſe fervid climes which give birth to the Ape tribes, the feet of the negroes are covered with a ſkin above an inch thick, while their hands are as ſoft as thoſe of Europeans; and, if the Apes walked in the ſame manner, they would doubtleſs have been furniſhed with ſimilar advantages. Beſides theſe analogical concluſions, we have the authority of ſome very reſpectable travellers in their ſupport: who inform us, that theſe animals run on all-fours in the woods; and that, when they are taken, their hands are tied behind them, to teach them to walk erect. This attitude becoming in ſome meaſure natural to them, after a proper period of inſtruction, they are ſent into Europe, thus trained, to aſtoniſh ſpeculative philoſophers with their near approaches to humanity; little or no regard being in general paid to the diſcrimination of what is natural in the animals, and what they have acquired in the ſavage ſchools of Angola and Benin.

Ape, Pigmy. This animal has a flattiſh face, with ears ſtrongly reſembling thoſe of the human ſpecies. The body is about the ſize of a cat's; the colour of the hair being an olive brown, with a yellowiſh tinge beneath. Theſe animals are gregarious, and feed on fruits and inſects; particularly ants, of which they are ſo remarkably fond, that they turn over every ſtone in ſearch of them. When attacked by wild beaſts, they betake themſelves to flight; and, if they happen to be overtaken, boldly face their purſuers, flinging the ſubtile ſand of the deſart in their eyes, ſo as often to effect their eſcape. They inhabit Africa; and are frequently exhibited among our collections of foreign animals: they are docile, and of a gentle diſpoſition, and appear to be the Pigmies of antiquity. In Æthiopia, one ſeat of that imaginary nation, they are extremely numerous. The ancients had many ridiculous legends reſpecting theſe Pigmies; whom they deſcribed as a people reſiding near the fountains of the Nile, and repreſented as annually levying war againſt the cranes; (that is, to ſteal their eggs;) and hence the fiction of their combats. None of the ancients, however, have ventured to aſſert, as from their own knowledge, that ſuch a nation ever exiſted: Strabo judiciouſly remarks, that the account of them reſts ſolely on report; and Ariſtotle ſpeaks of them only by hearſay, when he informs us, that they rode on goats, rams, and even birds of no very conſiderable ſize. The Indians, taking advantage of vulgar credulity, ſometimes embalmed this ſpecies of Ape, and ſold them as real Pigmies; and of this kind, unqueſtionably, were the diminutive mortals mentioned by Groſſe, which he tells us were found in the foreſts of the Carnatic.

Ape, Long-Armed. This animal, to which Buffon gives the name of the gibbon, is a very extraordinary and remarkable creature. It is of different ſizes, being from two to four feet in ſtature. It's face, which reſembles that of a man, has a circle of buſhy hair all round; it's eyes are large, and are ſunk in their ſockets; it's features are much tanned, and it's ears are well-proportioned. It walks erect, and is deſtitute of a tail; the nails on the fingers are flat, thoſe on the toes being remarkably long. But it chiefly differs from all others of the Ape tribes in the extraordinary length of it's arms, which are long enough to reach the ground when the animal ſtands erect; ſo that it can walk on all-fours, and at the ſame time preſerve it's upright poſture. This animal, next to the ourang outang, has the ſtrongeſt reſemblance to mankind, not only in it's figure and conformation, but in it's docility and gentleneſs of manners.

The Long-Armed Ape, of which there is a greater and a leſſer ſpecies, is a native of the Eaſt Indies, and particularly found along the coaſt of Coromandel. In the foreſts of Devat, in the interior parts of Bengal, it grows to the height of a man, and is there called jolok. It is alſo found in Malacca, the Molucca iſles, and in Sumatra; where hundreds may be ſeen together on the tops of the trees.

The great black Ape of Mangfi, a province of China, and mentioned by Du Halde, is probably of this ſpecies. Sir Aſhton Lever has a ſpecimen in excellent preſervation, the body of which is covered with very long ſoft hair, and the hands reach quite to the ground. The height of the animal is three feet.

Ape, Barbary. This ſpecies, which Buffon diſtinguiſhes by the name of the magot, is wholly deſtitute of a tail, though it has a ſmall protuberance on it's large, red, and callous rump. The face is peculiarly prominent, and far more like that of a quadruped than of a man. The body is covered with a dirty greeniſh brown hair, that on the belly being of a dull pale yellow. It has flat nails, ears like the human race, and bare buttocks. It generally grows to about four feet in height; and inhabits many parts of India and Arabia; as well as the whole continent of Africa, except Egypt, where none of this kind have ever been diſcovered. Theſe animals, as they recede from the human form in conformation and figure, appear alſo very different in their diſpoſitions; being ſullen, vicious, and untractable. They are frequently exhibited in Europe; and, by mere force of diſcipline, are brought to perform ſeveral tricks: but they are naturally unamiable in all their manners. In the open country of Indoſtan, they ſometimes aſſemble in great numbers; and they often attack the women going to market, and rob them of their proviſions. The females of this ſpecies carry their young in their arms; and, though thus encumbered, leap with ſurprizing agility from tree to tree.

Some ſavage nations regarding theſe animals as their principal divinities, have erected the moſt magnificent temples to their honour; and when the Portugueſe plundered a religious ſtructure of this kind in Ceylon, they are ſaid to have found the tooth of an Ape in a ſmall golden caſket, which was held by the natives in ſuch extraordinary veneration, that they offered 700,000 ducats for it's redemption: but the equally ſuperſtitious viceroy refuſed this advantageous offer for his country; inſiſting that it ſhould be burnt, in order to check the progreſs of idolatry.

Ape, Tufted. The head of this animal is fourteen inches long; the face being blueiſh and naked, and the noſe of a deep red colour. The eye-brows are black, and the ears are formed like thoſe organs

in

1. LONG-ARMED APE. 2. COMMON ASS. 3. ATHERINE. 4. ATTAGEN. 5. AVOSET.

6. COMMON AUK. or RAZOR BILL. 7. GREAT AUK. 8. LITTLE AUK.

Plate V.

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in mankind. It has a long upright tuft of hair on the crown of it's head, another under it's chin, and two long tuſks in the upper-jaw. The fore-feet reſemble human hands, but the nails on the fingers are flat. The fore-part of the body, and the inſide of the legs and arms, are quite naked: the other parts are covered with mottled brown and olive-coloured hair, that on the back being duſky; and the buttocks are red and bare. The length of the whole animal, in Sir Aſhton Lever's Muſeum, falls ſomething ſhort of three feet ſix inches. It has a moſt ſavage and diſguſting appearance, and is peculiarly fierce and ſalacious. Though it uſually goes on all-fours, it will ſometimes ſit on it's rump, and ſupport itſelf with a ſtick: in this attitude, its hold a cup in it's hand, out of which it drinks with facility. This animal, like the reſt of the Ape tribe, chiefly ſubſiſts on fruits, and has apparently no carnivorous appetites.

Ape Hog. This animal, to which Ariſtotle gives the name of ſimia porcaria, is a ſpecies of which moderns have no perfect knowledge. Buffon imagines it to be the baboon; but, as Ariſtotle expreſsly deſcribes Apes as having no tails, and enumerates this as one of the genus, we cannot ſubſcribe to the opinion of this celebrated naturaliſt. In the Britiſh Muſeum, there is a drawing of an Ape, with a noſe exactly reſembling that of a hog, which may perhaps be intended for the animal mentioned by Ariſtotle; but the painting is unaccompanied by any account which might enable us to trace it's hiſtory.

Ape, Sea. Mr. Stellar, in his Hiſtory of Kamſchatka, deſcribes a very ſingular animal which he ſaw on the coaſt of America, and to which he gives the name of the Sea Ape. It's head reſembled that of a dog; it's ears being ſhort and erect; it's eyes large; and it's lips covered with a ſort of beard. The length of it's body was about five feet, and it's form was thick and round; being largeſt near the head, and tapering to the tail, which had two prongs. The body was covered with thick hair, grey on the back, and red on the belly; but our author could neither diſcover feet nor paws. It appeared extremely frolickſome, and diverted itſelf with a variety of tricks; ſometimes ſwimming on the one ſide of the ſhip, and ſometimes on the other, and apparently obſerving it with great amazement. It frequently approached ſo near the veſſel, that it might have been reached with a pole; but, on the ſmalleſt motion of the ſailors, it immediately retired. Sometimes it would raiſe itſelf ſo as to have at leaſt a third part of it's body out of water, and continue erect for a conſiderable time; then, ſuddenly darting under the ſhip, inſtantly appeared on the other ſide exactly in the ſame attitude: and this frolic it repeated for thirty or forty times ſucceſſively; ſometimes bringing up ſea-plants, wantonly toſſing them about, and catching them again in it's mouth, with a number of other fantaſtic tricks.

APER. A ſea fiſh, called by ſome ſtrivale and riondo. It approaches very much in ſhape to the faber or doree, but is conſiderably ſmaller.

APER. The claſſical name for the boar.

APER MOSCHIFEROUS. A name by which ſome naturaliſts have diſtinguiſhed the tajacu of America.

APEREA. A ſmall American animal of the rabbit kind, apparently of a mixed nature between the rabbit and the mouſe; having exactly the ſhort round ears of the mouſe kind, but all the other properties of the rabbit. It therefore obtains the name of the Brazilian rabbit, and generally grows to about a foot in length. It's upper-lip is divided; it's ears are ſhort; it has four toes on the fore-feet, and three on the hind; and is deſtitute of a tail. The colour of the upper part of the body is black, mottled with tawny; and it's throat and belly are white. It is a native of Brazil, where it lives in the holes of rocks; and, being forced from it's ſhelter, is hunted by dogs. It's fleſh is ſuperior in goodneſs to that of the European rabbit; and it reſembles the hare in it's paces.

APER PISCIS. An appellation which ſome authors have given to the ſea-fiſh, more uſually called the capriſcus.

APHIS. The name of a genus of inſects, called alſo pediculus arboreus, or the wood-louſe, belonging to the hemiptera inſecta of Linnæus, and of which that great naturaliſt has enumerated ſixteen different ſpecies; namely, that of the currant-buſh, of the elm-tree, of the elder, of the maple, of the lime-tree, of the birch, of the pine, of the roſe, of the parſnip, of the dock, of the carduus benedictus, of the mugwort, of ſaw-wort, of chickweed, of the lily, and of the cabbage.

The ſpecies, however, are certainly more numerous; but they are all denominated from the trees, buſhes, or plants, on which they are reſpectively found. According to the obſervation of an ingenious naturaliſt, the Aphides are at one time of the year viviparous, and at another oviparous. Thoſe of the roſe-tree have been particularly remarked; and, of ten generations, which regularly ſucceeded each other in the courſe of one ſpring, ſummer, and autumn, the firſt proceeded from eggs laid during the preceding autumn; the eight following were all produced viviparous, and conſiſted entirely of females, of which gender, likewiſe, was the firſt brood; and, in the tenth generation, which appeared rather earlier than the middle of September, a few male inſects were diſcovered: theſe laſt arrive at their full growth in three weeks; and, having intercourſe with the females, thoſe eggs are ſoon laid which become hatched in the ſpring. As theſe inſects differ more in colour and ſize, than in any peculiar habits or conformation, it will be ſufficient to give a deſcription of one ſpecies, the Aphis of the currant-buſh, from which the figure of the reſt may be eaſily conceived. This creature is about the ſize of a common louſe, and of a browniſh green colour. The legs are green; the joints of the knees, which commonly project above the body, are brown; the feelers, which are ſtraight and ſlender, contain a joint near the head, where they are ſomewhat bent, and exhibit a darkiſh appearance. The hinder part of the breaſt is blackiſh; the ſides of the body are variegated with ſmall black ſpots; and the wings, which are erect, are whitiſh, except only that they have a few black veins, and two of them are extremely minute. The vent is prominent, and furniſhed with two briſtly appendages conſiderably ſhorter than the wings.

APHRODITA. A genus of ſea inſects, called by Columna the pudendum regale; by Bartholinus, vermis aureus; and by others, mus marinus, or the ſea-mouſe. The general characteriſtics are, that it's figure is oval and aculeated, having a number of faſciculi on each ſide, ſupplying the place of feet; it's mouth is cylindric, retractile, and placed at the extremity; and it is furniſhed with two cetaceous feelers. It is one of the gymnarthrodia, or inſects with naked bodies; and belongs to the

order of moluccæ, in the Linnæan arrangement of worms. There are ſeveral diſtinct ſpecies, conſiderably varying from one another, found on the coaſts of the Britiſh iſles, which Pennant has diſtinguiſhed by the names of the aculeated, ſcaled, pedunculated, annulated, and little.

The Aphrodita Aculeata is cloathed with ſhort brown fur on the back, the ſides are covered with green hairs, of a very beautiful hue, mixed with ſharp ſpines; and the ſkin of the belly is bare. The feet are compoſed of a faſciculus of five or ſix ſtrong ſpines, which grow to the length of five or ſix inches, and of which there are about thirty-ſix on each ſide.

The Aphrodita Squammata has the back covered with two rows of large deciduous ſcales, and is ſomewhat more than an inch in length.

The Aphrodita Pedunculata is diſtinguiſhed by having two rows of ſcales on the back, placed alternately; the mouth is cylindric and projecting, and the animal is about an inch long.

The Aphrodita Annulata is of an oblong figure, annulated and ſmooth, except that a row of ſmall ſpines, one on each annulation, run along the back; it's feet are ſmall; it's length is about two inches and a quarter; and it's colour is a pale yellow.

The Aphrodita Minuta is diſtinguiſhed by the minuteneſs of it's ſcales, and the ſlenderneſs of it's form. It's length is ſomewhat leſs than an inch.

APHUA COBITES. A name ſometimes applied to expreſs the fiſh called in England the ſea-loach, which is frequently caught in the Mediterranean ſeas, and never exceeds three or four inches in length. It's body is round, with a little depreſſion on the back; and it's colour white, with a variation of black ſpots diſſeminated over the whole.

APIARIA. A fly which makes it's appearance only in autumn, and is commonly found on parſley. It is a ſpecies of the attelabus; and is furniſhed with two wings of a deep ſhining black. It collects wax on it's thighs after the manner of bees, from which circumſtance it receives it's name.

APIASTER. A name by which ſome naturaliſts expreſs the bee-eater, more generally known by the appellation of merops.

APIS, or APES. A genus of four-winged inſects; their wings being entirely membranaceous, and their tails furniſhed with ſtings. This genus comprehends the bee, waſp, hornet, and humble bee.

APIVORUS BUTEO. A title by which ſome authors expreſs the bird uſually known in England by the name of the honey-buzzard. It is a little larger than the common buzzard; it's beak is black, aduncated, protuberant in the middle, and covered down to the noſtrils with a black wrinkled ſkin; and it's mouth opens very wide, having internally a yellowiſh hue. This bird either builds itſelf a neſt of ſticks covered with wool, or occupies the deſerted habitation of a kite for the purpoſe of breeding it's young; which it principally feeds with the nymphs or magot-worms of bees and waſps, and pieces of honey-combs are frequently found in the neſt; itſelf feeding on newts, frogs, and other ſmall animals. It is remarkable for running ſwiftly on the ground; and the female is diſtinguiſhed from the male by being larger, a common mark of diſcrimination in birds of prey.

APODES. A title of Greek derivation applied by zoologiſts to ſignify a fabulous kind of birds, ſaid to exiſt in ſome of the oriental iſlands; and which, being entirely deſtitute of feet, ſupport themſelves on the branches of trees by their crooked bills. The Dutch and Germans have alſo their Apodes, a ſpecies of birds reſembling the common ſwallow, with legs and feet ſo extremely minute, as to be rather adapted for creeping than running.

APODES. One of the four orders of fiſhes, in the Linnæan ſyſtem, comprehending eight genera, and twenty ſpecies. Their diſtinguiſhing characteriſtic is, that they are deſtitute of ventral fins.

APPLE FLY. A name uſually applied to expreſs a ſmall green fly found ſometimes on the rind of an apple, and hatched by a worm, or maggot, which infeſts that fruit.

APTERA. A claſſical name derived from the Greek, and uſed to denote that order of inſects which have no wings. In the Linnæan ſyſtem of arrangement, they form the ſeventh order in the claſs of inſects, comprehending fourteen genera, and two hundred and ninety-ſeven ſpecies. Hill ſubdivides this ſeries into two claſſes; namely, ſuch as have neither wings nor legs, to which he gives the appellation of Aptera anarthra, and ſuch as have legs but no wings, which he calls Aptera podaria.

APUA. The name of a ſmall fiſh, which ſome naturaliſts have fancifully ſuppoſed is generated by the mud and ſlime on the ſhores, but ſuch abſurd conjectures as theſe require no confutation. There are two ſpecies of this fiſh, the Apua Vera, and the Apua Phalerica.

APUA MEMPRES. A name by which ſome denote the common pilchard.

ARACARI. The name of a Brazilian bird, of the woodpecker kind. It's ſize is equal to that of the common green woodpecker; and it has a bill four inches long, an inch and a half broad or deep, and three inches and a half round in the thickeſt part, which bends downward, and is ſharp-pointed like a parrot's. The upper mandible is larger and longer than the lower one; and both are deeply ſerrated above half way from the end. The bill is hollow, and as light as ſponge; the upper mandible being white, diſtinguiſhed by a black line running along the middle or ridge from head to point, and the lower one wholly black. The bill has a triangular form at it's inſertion into the head, where it is ſurrounded with a white line. It's tongue, which is four inches long, is black, and has the appearance of being feathered. It's head, which is not very large, is broad, and compreſſed; it's eyes are big, and have black pupils, with yellow irides; and the neck is not longer than a parrot's. The body, from the riſe of the neck to the tail, is about five inches long; the tail, which is broad like the woodpecker's, is at leaſt ſix; the thighs are two inches, and the legs one inch and a half. The legs and feet, like thoſe of parrots, are black or dark green, having two fore-toes, one longer than the other, and two back-toes, likewiſe of unequal lengths. The claws are crooked, and of a duſky or black colour. The breaſt, and whole lower belly of this bird, are elegantly cloathed with yellow feathers, mingled with pavonine; and, acroſs the breaſt, from one ſide to the other, there is a broad red line. The back, wings, tail, and thighs, are covered with blackiſh green feathers, like thoſe on the common magpye; and the end of the back, above the beginning of the tail, is a deep red for a conſiderable length. The wings, which terminate at the riſe of the tail, are lined with a dark aſh-colour; and the inſide of the bill is black. This bird has an odd cry, in which it nearly pronounces it's own name, 'Aracari!'

Aracari! It conſiderably reſembles the toucan, or Braſilian pye; and, from the conformation of it's feet, ſeems evidently of the woodpecker kind.

ARACHNOIDES. The name of one of the genera of the echini marini: the diſtinguiſhing characters of which are, that it is of a circular form, but variouſly indented at the edges; the mouth is round, and placed at the centre of the baſe; and the aperture for the anus is quadrangular, and ſituated in one of the ſides on the ſuperior ſuperficies, but near the edge.

ARANEA. A genus of the aptera inſects, in the Linnæan ſyſtem. See SPIDER.

ARANEA CONCHA. The name of a genus of ſea-ſhell, of which there are ſeveral ſpecies, uſually diſtinguiſhed in England by the name of ſpider-ſhells. They belong to the family of murex, and their peculiar character is the having digitated lips. The ſeveral ſpecies have different numbers of fingers, from the lip of the ſhell, as four, five, ſix, ſeven, and eight.

ARANEUS MARINUS. The ſea-ſpider; a name by which ſome naturaliſts have expreſſed the fiſh more uſually called draco marinus, which is ſuppoſed to contain ſome venomous qualities in the ſpines of it's dorſal bone.

ARARAUNA. A name given by Marcgrave to a Braſilian bird of the macaw kind, but of a different colour. The bill is black, and the eyes are a fine ſky blue, with black pupils: the ſkin round the eyes is marked with black and white ſpots; and the legs and feet are brown. On the fore-part of the head is a kind of cap, conſiſting of fine green plumage; and, under the throat, a circle of black feathers. The ſides of the neck, the breaſt, and the lower part of the belly, are yellow: but the hinder part of the head, as well as the neck, back, and wings, are all blue; except that the extremity of the latter is mixed with yellow. The tail is beautifully intermixed with long blue and yellow feathers, but in general all the external blue feathers are internally black.

ARCÆ, or ARKS. A family of ſhells of the bivalve kind, ſometimes called boats, having their hinges on a perfect ſtraight line, and being of a ſomewhat ſquariſh figure, or rather oblong, like the Noah's Arks and ſquare cockles.

Conchologiſts aſſign different ranks to the Arks: Liſter inſerts them among the multarticulate cockles; placing the Noah's Arks among the muſcles, as many-toothed muſcles. Woodward ranks them among his polyginglymi forma oblonga; Argenville places them in his fourth family, or that of heart-cockles; Davila makes them a diſtinct genus of his fourth family, or heart-cockles, and gives them the name of Arks; and Linnæus ranks them as a diſtinct genus, and calls them Arca. This family, however, contains but a very few ſpecies.

ARCHITALASSUS. A name given by ſome authors to that beautiful and precious ſhell called by us the admiral.

ARCTIC BIRD, AMERICAN. This bird is ſomewhat larger than a tame pigeon, and has a bill compreſſed ſideways, hooked at the point, with a nail at the extremity, which is ſeparated from the other part by a croſs furrow. The top of the head is blackiſh, and the ſides of the head, the throat, neck, breaſt, and belly, are white; but the legs and lower-belly are cinereous. The lower part of the neck behind, as well as the whole back, wings, and tail, are likewiſe of a dark cinereous colour. The tail-feathers are ſhorteſt on the ſides, and gradually increaſe in length to the two centre ones; which are very conſiderably longer, and reſemble thoſe of a man-of-war bird. The legs, which appear weak, are bare of feathers above the knees, and of a bright yellow colour. The feet are black, and the three forward toes are webbed like thoſe of a duck. This bird is a native of Hudſon's Bay, and Edwards conſiders it as a diſtinct ſpecies.

ARDEA. A genus of the order of grallæ, belonging to the claſs of aves, in the Linnæan ſyſtem: it's diſtinguiſhing characters are, that the beak is ſtraight, acute, long, and compreſſed; a ſulcus, or furrow paſſing from the noſtrils, which are linear, to the apex; and the feet are furniſhed with four toes. Linnæus enumerates twenty-ſix ſpecies of this genus.

ARDEOLA. A very beautiful Braſilian bird of the heron kind, but not larger than a pigeon.

ARENARIA. A bird uſually known in England by the name of the ſanderling, and in ſome places, particularly in Cornwall, by that of the curwillet. It is a water-bird of the long-legged, open-footed kind, and is a ſize larger than the tringa minor, or ſand-piper. This ſpecies frequents the ſea-ſhore, and flies about in large flocks.

ARGENT AND SABLE. A very curious white moth beautifully chequered and ſpotted with black; the expanſion of the wings being about an inch and a half. The caterpillar feeds on white-thorn, and changes to a chryſalis about the firſt week in May; but both the caterpillar and chryſalis are ſo exceedingly ſcarce, that the moſt inquiſitive aurelian has never been able to diſcover either of them; and, indeed, the moth itſelf is ſeldom ſeen in this country. It ſeems to be a native of the woods, or lanes, where it is ſometimes caught about the beginning of June. In ſome particular ſeaſons this admired inſect is found in great plenty, and ſeems to breed with amazing fecundity; but then the ſpecies again become extremely ſcarce, and ſeveral years elapſe before they are again ſeen in any numbers.

ARGENTINA. The name of a genus of fiſh of the malacopterigious kind; and, in the Linnæan ſyſtem, of the order of abdominales; the characters of which, according to Artedi's definition, are theſe: the body is oblong and cylindric; and the teeth are placed on the tongue and palate. There appears, however, from the ſame author, to be only one ſpecies of this genus, which is furniſhed with large eyes, and a bifid tail, and is caught on ſeveral of the Italian ſhores. Ray deſcribes the Argentina to be a ſmall fiſh of the larengiform kind, caught in the Mediterranean, and common in the markets of Rome. This fiſh, which has ſometimes been caught on the Britiſh coaſt, is about three inches long; the eyes are large, and the irides ſilvery. The lower-jaw has a conſiderable ſlope; the teeth are very ſmall; the body is compreſſed, and almoſt of an equal depth to the anal fin; and the tail is forked. The back is of a duſky green colour; and the ſides and coverts of the gills appear as if overlaid with ſilver. On each ſide of the belly is a row of circular punctures; and above them there is another which terminates near the vent.

ARGONAUTA. A genus of worms of the teſtacea order; the animal of which is a ſepia; and the ſhell is univalve, ſpiral, membranaceous, and ſingle-celled. There are only two ſpecies of this genus.

ARGUS. An animal of Iceland, remarkable for it's number of eyes, and in that country called oſcabicorn.

ofcabicorn. It appears to be of the teſtaceous kind; of an oblong form, reſembling a crab's tail, and about an inch and a half in length.

ARINGA. A name applied by ſeveral naturaliſts to the herring.

ARMADILLO. The name of an animal ſomewhat approaching to the hedge-hog kind, called by Latin authors the echinus Brazilienſis; and, by Linnæus, daſypus cingulis novem, palmis tetradactylisplantispentedactylis.

Nature preſents us with ſeveral ſpecies of this genus; all of which, after a general hiſtory of the kind, it will be proper to deſcribe.

The Armadillo, which is an inhabitant of South America, is a peaceful harmleſs creature, incapable of injuring any other quadruped, and furniſhed with a peculiar covering for it's own defence. Poſſeſſed of no power of repelling external aſſaults, the Armadillo is obliged to ſubmit to every inſult; it is attacked without danger, and conſequently liable to various perſecutions.

The Armadillo is covered, like a tortoiſe, with a ſhell, or rather a number of ſhells, which prevent it's true proportions from being immediately diſcerned. At firſt view, it appears a round, miſhapen maſs, with a long head, and a very large tail, ſticking out at either end, as if unconnected with the reſt of the body. It is of different ſizes, from one to three feet long; and covered with a ſhell, divided into ſeveral pieces, and folding over each other, like the tail of a lobſter. The difference in the ſize of this animal, and alſo the different diſpoſitions, as well as the numbers of it's plates, have been generally conſidered as conſtituting ſo many diſtinct ſpecies, to which ſuitable names are given. In all, however, the animal is cloathed with this partial coat of mail; the conformation of which affords one of the greateſt curioſities in the ample field of nature.

This ſhell, which in every reſpect reſembles a bony ſubſtance, covers the head, the neck, the back, the ſides, and the rump, as well as the tail, which is armed to it's very extremity. Indeed, the only parts uncovered with this invulnerable mail are the throat, breaſt, and belly; and even theſe, which appear covered with a white ſkin reſembling that of a fowl when ſtripped of it's feathers, are in fact cloathed with ſhells in an incipient ſtate, of the ſame ſubſtance as thoſe on the back. The ſkin, therefore, in the ſofteſt parts, ſeems to have a ſtrong tendency to oſſifaction; but a compleat oſſification takes place only on thoſe parts which have the ſmalleſt degree of friction, and are the moſt expoſed to external injuries. The ſhell which covers the upper part of the body differs from that of the tortoiſe, being compoſed of more parts than one, which lie in bands over the body; and, as in the tail of the lobſter, ſlide over each other, being connected by a yellow membrane. This gives the animal a motion in it's back, and accommodates the armour to every neceſſary inflexion. The bands are of various numbers and proportions: in general, however, there are two large pieces, one covering the ſhoulders, and the other the rump. Between theſe, on the back, the bands are placed in different numbers, which fold over each other, and communicate motion to the whole. Beſides their opening acroſs, they alſo open ſtraight along the back, ſo that the animal is enabled to move in all directions. In one ſpecies there are three of theſe bands; in another, ſix; in a third, eight; in a fourth, nine; in a fifth, twelve; and, in a ſixth, eighteen. The ſhells are variouſly coloured in different kinds, but uſually they are of a dirty grey, or rather ſand-colour: and theſe hues, in all of them, ariſe from another peculiar circumſtance in their conformation; the ſhell itſelf being covered with a ſoftiſh ſkin, which is ſmooth and tranſparent.

But though theſe ſhells may well defend the animal from a feeble enemy, they can make but a ſlight reſiſtance againſt any powerful opponent: nature has, therefore, given the Armadillo the ſame means of protecting itſelf as that with which it has endued the hedge-hog and the pangolin; for, the inſtant it perceives itſelf attacked, it withdraws it's head under it's ſhells, leaving no part viſible but the tip of it's noſe; and, if the danger increaſes, the animal's precautions being exerted in proportion, it tucks up it's feet under it's belly, unites it's two extremities together, the tail appearing like a band to ſtrengthen the connection; and, thus rolled up, becomes a ſort of ball ſomewhat flatted on each ſide. In this condition it remains till it's fears have wholly ſubſided; and it is often toſſed about at the pleaſure of other animals, having little or no appearance of life or motion. Whenever the Indians catch it, which is always in this form, they lay it cloſe to the fire, till the poor animal is obliged to expand itſelf, and thus ſubmits to it's fate.

Before the diſcovery of America, the Armadillo was entirely unknown; nor does the old world appear to contain a ſingle ſpecies of theſe extraordinary creatures. They are extremely mild and inoffenſive; unleſs by accident they find their way into a garden, where they deſtroy the choiceſt fruits and vegetable productions. Though they are natives of the warmeſt parts of America, they bear the ſeverity of colder climates without any apparent injury, and are often exhibited among our collections of wild beaſts. Their motion ſeems to be a quick walk, but they can neither run, leap, nor climb up trees; ſo that if they are once found in an open place, they have no poſſible means of eſcaping. In this extremity, they commonly make towards their holes as faſt as poſſible; or, that being impracticable, dig a new hole before the enemy arrives. For the performance of this buſineſs a few moments are generally ſufficient, as they burrow with all the expedition of a mole; being furniſhed with claws, extremely large, ſtrong, and crooked, and uſually four on each foot. They are ſometimes caught by the tail, as they are making their way into the earth; but ſuch is their reſiſtance, and ſo difficult is it to draw them back, that if any great force is exerted, they readily leave their tails in the hands of their enemies. The purſuers, ſenſible of this, ſeldom pull their tails violently, but only hold them while another digs the ſurrounding earth, and then the animals are caught alive. The inſtant the Armadillo perceives itſelf in the power of it's enemies, it's laſt reſource is to roll itſelf up, and thus patiently wait whatever tortures the cruel captor thinks proper to inflict. The fleſh of the ſmaller ſpecies is ſaid to be very delicate food, ſo that we may naturally ſuppoſe they receive little mercy: they are, indeed, purſued with unceaſing induſtry; and, though they burrow very deep in the earth, many expedients have been adopted to force them out; ſometimes by contriving to fill the hole with ſmoke, and at others by overwhelming them with a deluge of water. A ſmall ſpecies of dogs are alſo bred to the chace of theſe animals, which quickly overtake them, if they happen to be at any diſtance from their burrows, and oblige them to roll themſelves

ſelves into a ball, when they are immediately picked up. If, however, they be near a precipice, they often eſcape by rolling themſelves up, and devolving from rock to rock; and this they can do without the ſmalleſt degree of danger or inconvenience. They are ſometimes caught in ſnares placed by the ſides of rivers, and low moiſt grounds, which they generally frequent; and this mode commonly ſucceeds better than either of the former, as their burrows are very deep, and they ſeldom quit them till night. Indeed, they never venture far from their retreats, ſo that it requires both patience and ſkill to intercept them on their way.

Almoſt every ſpecies turn up the ground like the hog in ſearch of roots, which conſtitute a principal part of their food: they live alſo on melons, and other ſucculent vegetables, and will eat fleſh when they can procure it. They likewiſe prey on worms, ſmall fiſh, and water-inſects.

In the larger ſpecies, the ſhell is much more ſolid than in the ſmall ones, and the fleſh harder and more unſavoury. Thoſe, too, generally reſide in dry upland grounds; while the ſmall ſpecies are always found in moiſt places, and in the vicinity of brooks and rivers. Though all roll themſelves up into balls, thoſe which are furniſhed with the ſmalleſt number of bands find the greateſt difficulty in doing this compleatly. The Tatu Apara, or Six-banded Armadillo, for inſtance, when rolled up, preſents two great interſtices between it's bands, where it is eaſily vulnerable, and of courſe liable to external injury from the meaneſt quadruped.

Between this animal and the rattle-ſnake the cloſeſt friendſhip is ſaid to ſubſiſt; and they are reported to live peaceably and commodiouſly together, being often tenants of the ſame ſubterraneous retreat. This, however, may probably be a friendſhip of neceſſity; the rattle-ſnake taking poſſeſſion of the Armadillo's hole, which neither is willing to quit while there is an impoſſibility of their injuring one another.

The plates of the Armadillo's ſhell, powdered, and adminiſtered in doſes of a drachm, are eſteemed ſudorific; and, as ſome aſſert, conſtitute a powerful remedy for the lues venerea.

ARMADILLO, THREE-BANDED, or the TATU APARA, has ſhort broad rounded ears; and the cruſt on the head, back, and rump, is divided into elegant pentangular tuberculated ſegments. In the middle are three bands; on each foot five toes; and the tail is extremely ſhort, being no more than two inches long, though the ſhell, taking all the pieces together, is eighteen inches broad. This animal grows extremely fat; and, when young, is eſteemed delicious food: but, with age, it acquires a rank, muſky taſte, which renders it's fleſh abſolutely nauſeous. It breeds every month, and brings forth four at a time.

ARMADILLO, SIX-BANDED, or the ENCORIBERT of Buffon, is diſtinguiſhed by having ſix bands acroſs the back; between which, and alſo on the neck and belly, are a few ſcattered hairs. The cruſt on the head, ſhoulders, and rump, is formed of angular pieces; the tail being very thick at the baſe, and tapering to a point; and there are five toes on each foot. This ſpecies inhabits Brazil and Guiana.

ARMADILLO, EIGHT-BANDED, or the TATUETTE, is furniſhed with eight bands. It's body, from the noſe to the inſertion of the tail, is about ten inches long, and the tail is ſeven. The ears are erect, and two inches long; and the eyes are ſmall and black. The fore-feet have four toes, and there are five on the hind ones. It inhabits Brazil; and it's fleſh is reckoned the moſt delicious of the whole genus.

ARMADILLO, NINE-BANDED, or the CACHICHAME of Buffon, is about two feet long from the noſe to the tail. The ears are long; and the cruſt on the head, ſhoulders, and rump, is marked with hexangular figures: on the ſides are nine bands, diſtinguiſhed by tranſverſe marks; and the breaſt and belly are covered with long hairs. The fore-feet have only four toes, but there are five on the hind ones; and the tail, which is long and taper, exceeds the whole body in length. There is a ſpecimen in the Leverian Muſeum, which agrees with this deſcription, except that the cruſts on the head, and other parts of the body, are covered with large ſcales not angularly formed.

ARMADILLO, TWELVE-BANDED, or the KABASSOU of Buffon, is the largeſt animal of the whole genus. The body is near three feet long, and the tail about eighteen inches. The ears are broad and erect; the cruſt on the ſhoulders is marked with oblong pieces, that on the rump being hexangular; on the ſides are twelve bands; and all the feet have five toes each. The tail tapers to a point, and there are a few hairs ſcattered over the body.

Buffon mentions another Armadillo with Twelve Bands, having it's tail covered with rhomboidal figures; from which diſſimilarity he ſeems doubtful whether it ought to be referred to the ſame ſpecies.

ARMADILLO, EIGHTEEN-BANDED, or the CIRQUEÇON of Buffon, has a very ſlender head, with ſmall erect ears; and the cruſt on the rump and ſhoulders is compoſed of quadrangular pieces. The bands on the ſides are eighteen in number; and the length of the animal, from the noſe to the inſertion of the tail, is about fifteen inches. This ſpecies likewiſe inhabits South America.

ARQUATA. The name of a bird called alſo by ſome naturaliſts cumenius; and uſually known in England by that of the curlew. The fleſh of the Arquata is eſteemed very delicious. The male is ſomewhat ſmaller than the female; and is called the jack-curlew.

ARQUATA MINOR. An appellation which ſome authors have given to the bird known in England by the name of the wimbrel.

ARRARACANGA. A bird reſembling the maccaw. It is about the ſize of a raven, with a large head, flat and broad on the upper part. The eyes are beautiful, and of a ſky-blue colour, with a black pupil; the bill is large and aduncated, being white above, and black underneath; the tongue is like that of a parrot; and the feet and legs, which are black, are alſo formed in the ſame manner as the parrot's. The head, neck, breaſt, belly, and thighs, as well as part of the tail, and the beginning of the wings, are covered with the moſt brilliant red feathers; but the middle part of the wings is green, and the reſt blue. The extremity of the back towards the rump is covered with blue feathers, mixed with ſome others of a browniſh caſt; and the tail is about three inches long. The Arraracanga, like the parrot, is capable of being taught to pronounce a few words, and feeds in the ſame manner.

ARTENNA. A water-bird of the ſize of a hen; of a browniſh colour on the back, and white on the belly. It's bill is hooked; and the three fore-toes are connected by a membrane; but the hinder

one is looſe. It is a native of the Iſland Tremiti, in the Adriatic Sea; and is generally conjectured to be the avis diomedis of antiquity.

ARU, or KARA. A bird of the penguin or hawk kind. It is larger than a duck; it's head, neck, and back, are black; it's bill is long, ſtraight, black, and ſharp; it's legs are black, with a caſt of red; it has three black toes; and is web-footed. Great numbers of theſe birds are found on the rocky iſlands of Kamtſchatka. The inhabitants kill them for the ſake of their fleſh, though tough and ill-taſted; but more for their ſkins, of which they make themſelves garments. The eggs of the Aru are eſteemed a great delicacy.

ASCARIDES. A claſs of worms of a ſlender filiform body, attenuated at each end; and ranged by Linnæus among the vermes inteſtinæ. Theſe worms are chiefly found in the inteſtinum rectum of children; are frequently voided with the fæces; and occaſion a perpetual motion in the inteſtines, and an intolerable itching.

The Aſcarides, however, are not ſo dangerous as many other worms; but, for ſeveral reaſons, they are more difficult to be expelled: their ſituation is ſo remote from the ſtomach, that medicines generally loſe their effects before they can reach them; they are lodged in a viſcous humour, which repels and prevents the operation of applications; and they ſometimes aſcend into the cæcum, where they remain entrenched in perfect ſecurity.

Aſcarides is alſo a name uſed by Reaumur to denote a ſort of ſmall worms, or maggots, bred from the eggs of winged animals; and which, burying themſelves between the membranes of the leaves of plants, conſume the parenchymatous ſubſtance.

Small as theſe Aſcarides in general are, they nevertheleſs exhibit the proper characters by which they may be reduced to regular claſſes: thoſe which derive their origin from the eggs of butterflies are truly and properly caterpillars in miniature; the maggots from flies form a ſecond claſs; and the Aſcarides of beetles, which change to hexapode worms, a third.

With reſpect to the minute caterpillars, ſome are furniſhed with ſixteen feet, while others have only fourteen; ſome are perfectly ſmooth and equal all over the body, while others have a number of rings or annular diviſions like the larger caterpillar. Their ſeveral changes, however, before they arrive at the fly ſtate, are the ſame with thoſe of the common ſilk-worm, and other ſpecies of large caterpillars. The Aſcarides of the parent butterfly are depoſited ſingly, only one being placed on each leaf; for the ſmall caterpillar is of a ſolitary nature. Theſe eggs are ſo minute as to be ſcarcely perceptible: Reaumur, however, not only diſcovered them lying on the leaves of plants, but alſo traced them to their time of hatching. This accurate obſerver took notice that the caterpillar never enjoys the light, or free air: for, as ſoon as it is hatched, it eats it's way through the integuments of the leaf; and, under the cover of it's ſhell, buries itſelf among the parenchymatous matter, from whence it never ſtirs till it arrives at it's winged ſtate.

The worms hatched from the eggs of flies make their way as ſpeedily into the ſubſtance of the leaf as the minute caterpillars: but the latter eat their way through the leaf with their teeth; while the former continue ſtriking their heads forcibly againſt it till they compleat a perforation large enough to admit their whole bodies, when they feed on the parenchyma of the leaf, in the ſame manner as the caterpillars, till they finally change into their chryſalis ſtate within the covert of the membrane of the leaf.

The laſt kind of Aſcarides, which eventually become beetles, make their way into the ſubſtance of the leaf after the ſame manner as the preceding; and, when they have fed on it's parenchyma and juices throughout their ſtated time, they ſometimes change in the covering of the membrane, and at others come out of their holes, as if preferring the ſurface of the leaf for that purpoſe.

ASCHIA. Another name for the grayling.

ASCIDIA. A genus of worms belonging to the molluſca claſs in the Linnæan ſyſtem of arrangement, and comprehending ſix ſpecies. The body, which is brown, is fixed to a ſhell, rock, or ſome other hard ſubſtance; and it is furniſhed with two apertures; one on the ſummit, and the other ſomewhat lower, forming a ſheath. The extremities are generally ſcabrous; the middle part being ſmooth, and the lower flat. Animals of this genus poſſeſs the faculty of ſquirting out the water they have imbibed.

ASELLUS. The claſſical name for a genus of fiſh including the cod and the whiting; and of which naturaliſts enumerate ſeveral ſpecies.

ASILUS. A name given by ſome naturaliſts to the luteola, or regulus non criſtatus; an extremely ſmall bird, which commonly frequents willow-trees.

ASILUS. The claſſical name of a genus of inſects belonging to the diptera of Linnæus, and comprehending ſeventeen ſpecies.

This genus, which comprehends the hornet-fly or waſp-fly, has theſe characteriſtics: the inſect is bipennated; and has a ſtyle, or oblong body, terminated by a protuberance, called a balancer, under each wing: the head is furniſhed with a ſnout or beak of a ſubulated figure, which is very ſharp at the extremity.

Some naturaliſts have beſtowed on theſe inſects the appellations of muſcæ crabroniformes, muſcæ rapaces, and muſcæ veſpiformes.

ASINUS PISCIS. A name ſometimes given to the æglefinus, or common haddock, called alſo onos.

ASIO. A name by which Aldrovandus, and other naturaliſts, expreſs the otus, or leſſer-horned owl.

ASKER. A provincial appellation for the water-newt, or eft.

ASOTUS. A ſpecies of the ſilurus.

ASP. A ſpecies of venomous ſerpent, the bite of which is ſaid to occaſion a ſpeedy, but gentle death; on which account Cleopatra put a period to her exiſtence by the application of theſe reptiles to her boſom, when victory declared againſt Mark Anthony at the battle of Actium.

The Aſp is frequently mentioned by ancient hiſtorians; but their deſcriptions are ſo vague and uncertain, that it is difficult to determine what known ſpecies may at preſent be ſo called. The word is undoubtedly derived from Aſpis, a Shield; becauſe the creature lies convolved in a circle, in the centre of which it exerts or raiſes it's head like the umbo of a buckler.

Some authors deſcribe the Aſp as being about the ſize of a common ſnake; except that the back is broader, and the neck capable of a vaſt inflation when the creature is incenſed. It's teeth are alſo ſaid to be exceedingly long, and to ſtand out of it's mouth like thoſe of a boar; but this we may fairly aſſert to be fabulous, though mentioned by ſeveral naturaliſts

naturaliſts as a peculiarity of the ſpecies. It is probable, however, that two of it's longeſt teeth are hollow; that the venom emitted by the Aſp flows from them; and that they are covered with thin pellicles, which ſlide downwards when the ſerpent is diſpoſed to bite. The ſkin of the Aſp is ſaid to be covered with ſcales, but naturaliſts are by no means agreed on the colour. Some reckon the Aſp two cubits long; other four, or five; and Kolben affirms that he has often ſeen it ſeveral ells in length. From this diverſity of opinion, we are not warranted to decide: it is, however, unqueſtionably a native of Africa, and appears to have been well known to the ancients.

Lord Bacon aſſerts, that the bite of the Aſp is the leaſt painful of all the inſtruments of death; and ſuppoſes it's poiſon to have ſome affinity to opium, but to be leſs diſagreeable in it's operation. This, however, does not well accord with the deſcriptions of the ſymptoms given by Dioſcorides and others; who aſſert that, immediately after the bite, the ſight becomes dim, a ſenſible tumour ariſes, and a moderate pain is felt in the ſtomach. Matthiolus ſays, that the bite is followed by a ſtupor of the whole body; with paleneſs, coldneſs of the temples, continual yawning, a nictitation of the eye-lids, an inclination of the neck, a heavineſs of the head, an irrecoverable ſleep, and, laſtly, convulſions.

Ariſtotle informs us, that the bite of the Aſp admits of no remedy; and Pliny and Egineta confirm this opinion, in caſes where an amputation of the part cannot be effected. Others, however, recommend cicatrizing the wound, together with the internal uſe of hot alexipharmic medicines.

From ſome particular parts of this formidable ſerpent, the ancients made a plaiſter, of ſingular efficacy, as a diſcutient of ſtrumæ, and other indurations; and which was likewiſe beneficial in arthritic complaints. The fleſh and exuviæ of this animal were likewiſe admitted into the ancient materia medica.

ASPIUS. A ſpecies of the cyprinus, belonging to the abdominal order of fiſhes, and commonly found in the lakes of Sweden.

ASS. A well-known quadruped; which, from it's great reſemblance to the horſe, might naturally enough be ſuppoſed to be of the ſame ſpecies, and only ſomewhat degenerated from that noble animal: the ſpecies, however, are perfectly diſtinct; and there is an inſeparable line drawn between them, the animal produced from the mixture of a horſe and an aſs being barren. This, indeed, ſeems to be the barrier between every ſpecies of animals, which keeps them aſunder, and preſerves the unities of their forms. If the mule or monſter bred between two animals whoſe forms nearly approach each other, is no longer fertile, we may then conclude that theſe animals, whatever external ſimilitude may appear between them, are certainly diſtinct and ſeparate kinds. Nature, which always provides for the perfection and preſervation of her productions, has wiſely ſtopped the fecundity of theſe ill-formed productions, in order to preſerve the form of every animal uncontaminated; were not this the caſe, the different ſpecies of animals would ſoon be blended with each other; no one kind would preſerve it's original perfection; every creature would quickly degenerate; and the world would inevitably be over-run with productions alike monſtrous and deformed.

The horſe and the Aſs, though they ſomewhat reſemble each other, are nevertheleſs of two diſtinct kinds, and very different in their natures, tempers, and habits. Their ſhapes and manners may, indeed, poſſeſs a conſiderable degree of ſimilarity; but there is ſomething in every animal, beſides it's conformation and way of life, which determines it's ſpecific nature. Thus, between the horſe and the Aſs there is a much ſtronger reſemblance than between the goat and the ſheep; and yet the latter produce an animal capable of re-producing an offſpring reſembling the ſheep, while the mule of the former is marked with certain ſterility. The goat and the ſheep may, therefore, be ſaid to be of one ſpecies, though ſo unlike in figure; while the horſe and the Aſs are perfectly diſtinct, notwithſtanding they are ſo nearly allied in conformation. It has, indeed, been aſſerted by Ariſtotle, that their males are ſometimes prolific; but this aſſertion has never yet been confirmed by any poſitive teſtimony, though a period of near two thouſand years has elapſed ſince it was firſt advanced. On the contrary, it is an indiſputable fact, that the two animals, even in a ſtate of nature, are found to be entirely different. The wild Aſs is ſeen in ſtill greater abundance than the wild horſe; and the peculiarities of it's kind are more diſtinctly marked than in thoſe of the tame one. Were the Aſs only a horſe degenerated, the likeneſs would be ſtronger between them the nearer we approached to the original ſtock from which both have been ſuppoſed to ſpring. In ſuch a caſe, the wild animals of both kinds would reſemble each other much more than the tame ones, on whom Art has, for a ſucceſſion of ages, been exerting all her force, in producing foreign habits and alterations. The contrary, however, is apparent: and the wild Aſs has not only fewer properties of the horſe than that which is bred in a ſtate of domeſtic ſervitude; but even diſcovers a natural averſion to this noble animal.

The wild Aſs, or koulan, has by ſome writers been confounded with the zebra, though it is certainly of a very different ſpecies. The wild Aſs is not ſtreaked like the zebra, nor is it's ſhape ſo beautiful. It's forehead is more arched than in the common breed; it's ears are always erect, ſharp-pointed, and lined with whitiſh curling hairs; the irides are of a livid brown colour; the lips are thick; and the extremity of the noſe is extremely ſloping down to the upper-lip. It is alſo much higher than the common Aſs, and it's legs are finer; but it reſembles that animal in the narrowneſs of it's cheſt and body: it carries it's head, however, much higher, and it's ſkull is amazingly thick and ſtrong. The mane is compoſed of a ſoft woolly duſky hair, about three or four inches long, and extends quite to the ſhoulders; and the hairs at the extremity of the tail are coarſe, and about a ſpan long. It's colour in general is a fine ſilvery white: the ſuperior part of the face, the ſides of the neck and body, being of a flaxen hue; the hind-parts of the thighs of the ſame colour, while the fore-parts are divided from the flank by a white line, which extends round the rump to the tail; the belly and legs are alſo white; and along the very ridge of the back, from the mane quite to the tail, there runs a ſtripe of buſhy waved hairs of a darkiſh colour, another of the ſame hue croſſing it at the ſhoulders of the males, and forming a mark ſimilar to that in the tame or common Aſs.

It's winter coat, which is very fine, ſoft, ſilky, and much undulated, nearly reſembles the hair of the

the camel, being unctuous to the touch; and the flaxen colour, during that ſeaſon, becomes more exquiſitely bright. The head of the male koulan, or wild Aſs, is two feet long; from the beginning of the neck to the inſertion of the tail, is four feet eleven inches; the tail is about two feet and a half; and the ears are near a foot long. It's height before is upwards of four feet; and, behind, near four feet ſix inches. Such is the colour and conformation of this animal in a wild ſtate, in which it is often found in many iſlands of the Archipelago; particularly that of Ceugo; but more frequently in the dry and mountainous parts of Great Tartary. There are alſo many wild Aſſes in the deſarts of Lybia and Numidia, which run with ſuch amazing celerity, that even the courſers of that country can but ſeldom overtake them. Whenever they eſpy their purſuers, they ſet up a horrid braying; and, ſtopping ſhort till the nearer approach of their enemies, they fly off with the utmoſt ſpeed; and, on ſuch occaſions, generally fall into traps which have been previouſly prepared for them. The natives hunt them both for their fleſh and their ſkins: the former they eſteem very delicious food; and of the latter they compoſe that manufacture which is known by the name of ſhagreen. That part of the hide which is chiefly uſed for this purpoſe, grows near the rump of the animal; but it is artificially granulated. In Perſia, this manufacture is regarded as of conſiderable importance; and the natives of that country eſteem the bile of the wild Aſs a ſpecific againſt dimneſs of ſight.

Olearius relates, that a Perſian monarch once invited him to an entertainment of a very peculiar nature, which was exhibited in a ſmall ſtructure near the palace, conſtructed in the form of an amphitheatre: after a collation of fruits and ſweetmeats, upwards of thirty wild Aſſes were driven into the area, among whom the monarch diſcharged ſeveral arrows, in which he was imitated by the reſt of his attendants. The Aſſes, perceiving themſelves wounded, and unable to eſcape, inſtantly began to attack each other, biting with great ferocity, and braying in the moſt hideous manner: the arrows, however, continuing to be poured in from above, the Aſſes were all ſoon diſpatched; and, being ordered to be carried off, were conveyed to the king's kitchen at Iſpahan.

The Perſians ſo highly eſteem the fleſh of this animal, that it's delicacy is even become proverbial among them. When freſh killed, it is hot and unſavoury; but, being kept ſome time after it is boiled, it becomes excellent food. The fleſh of the tame Aſs, however, is more dry, tough, and diſagreeable, than even that of the horſe; and, according to Galen, it is very unwholeſome.

We ſhould not, however, haſtily decide on the different taſtes of different people, reſpecting the preference they give to certain kinds of food. The climate produces very conſiderable changes in the tenderneſs and flavour of ſeveral viands: beef, for inſtance, which is ſo excellent in England, is extremely tough and dry when killed under the line; pork, on the contrary, which with us is, ſo unpalatable during the ſummer months, is in the warmer latitudes, the fineſt eating imaginable, and infinitely ſuperior to any European hog's fleſh.

Before the diſcovery of America, the Aſs ſeems to have been entirely unknown on that continent, though the climate is peculiarly favourable to that race of animals; and where they have been permitted to run wild, they multiply ſo quick, that in ſome places they are become a nuiſance. In the kingdom of Quito, the owners of the ground where they breed ſuffer any perſon to take away as many as he can, on paying a ſmall conſideration, in proportion to the number of days employed in ſecuring them. On theſe occaſions the following method is adopted.

A number of whites on horſeback, attended by Indians on foot, proceed to the ſpots where the Aſſes are known to frequent; and, forming a circle, drive them into ſome valley: when, throwing the nooſe as they ride at full ſpeed, they endeavour to halter them. The animals, finding themſelves incloſed, make very furious efforts to procure their enlargement; and if only a ſingle one forces his way through, the reſt follow with irreſiſtible impetuoſity. When an Aſs is nooſed, the hunters throw it down, and ſecure it with fetters, leaving it in this ſtate while they purſue others: and, the ſport being ended, in order to bring away what they have caught with the greater facility, they generally couple them with tame animals of the ſame ſpecies. This, however, is no very eaſy taſk; as they are ſo remarkably fierce that they often wound the perſons who undertake to manage them. They are nearly as ſwift as horſes, and neither declivities nor precipices can retard their progreſs. They defend themſelves ſo actively with their heels and mouths, that they wound their purſuers, even while they continue their flight. But, notwithſtanding their wildneſs, after carrying the firſt load, their celerity ceaſes; their dangerous ferocity is no more; and they ſoon contract that dull aſpect which is ſo peculiar to the aſinine ſpecies. Theſe animals always feed together; and, if a horſe happens to intrude himſelf into their ſociety, they uſually bite and kick him till they leave him dead on the field.

Thus it obviouſly appears that the Aſs is naturally ſwift, fierce, and formidable; but, when tamed, it preſents a very different picture. The moment it's original liberty is loſt, it ſeems to relinquiſh every claim to freedom, and aſſumes a meekneſs and ſubmiſſion even humbler than it's ſervile ſituation. It is now the moſt patient and gentle of all domeſticated animals; and ſuffers with conſtancy, and perhaps with courage, all the ill-treatment which cruelty and caprice undeſervedly inflict. It is extremely temperate, as well with reſpect to the quantity as the quality of it's proviſions; being ſatisfied with the moſt neglected weeds, and making it's humble repaſt on the refuſe of the horſe and other animals. If it gives the preference to any vegetable, it ſeems to be the plantane, for which it is often obſerved to neglect other herbs. But, notwithſtanding this apparent indifference as to food, it is peculiarly delicate in it's water, drinking only at the cleareſt brooks. It is, in fact, a pattern of abſtemiouſneſs, both in drinking and eating; nor does it ever dip it's noſe in the ſtream, as is the practice of the horſe. Being ſeldom ſaddled, it frequently rolls itſelf on the graſs; and lies down for this purpoſe whenever opportunity permits, without regarding it's burden. It is, extremely averſe to water, never rolls in the mud like the horſe, and conſtantly turns out of it's way to avoid the dirty parts of a road.

In it's juvenile ſtate, the Aſs is ſprightly, and even beautiful; but it ſoon loſes theſe qualifications either by age or injurious treatment, and becomes ſlow, ſtupid, and obſtinate. It ſeems to evince no ardour; except only that the male is ſo extremely libidinous, that he has been known to drop down dead

dead immediately after copulation; and that the female is as ſtrongly attached to her young as the male is to her, not being deterred, either by fire or water, from protecting her foal. The Aſs is remarkably partial to it's owner, by whom it is too often abuſed: it ſcents him at a conſiderable diſtance; diſtinguiſhes him from others in a crowd; and ſeems to know the roads he has paſſed, as well as the place he inhabits. When overloaded, it ſhews the tyrant's injuſtice by hanging down it's head, and lowering it's ears; and, when too hard preſſed, it opens it's mouth, and draws back it's lips, after a very diſagreeable manner. If it's eyes are blinded, it immediately becomes motionleſs; and, on being laid down ſo that one eye is concealed in the graſs, while the other is covered with a ſtone, or any other article, it will continue fixed in the ſame ſituation, without attempting to riſe, or free itſelf from theſe ſlight impediments. It walks, trots, and gallops, like a horſe; but, though it ſets out very freely, it is ſoon weary, and no corporeal inflictions are then capable of making it mend it's pace. In vain does the unmerciful rider exert his whip, or his cudgel: the poor animal patiently endures it all; and, as if conſcious of it's own imbecillity, and of the inefficacy of reſiſtance, does not even attempt to move.

But, notwithſtanding the natural ſtupidity of this animal, it is capable of being trained with the ſame facility as moſt other quadrupeds; and ſeveral Aſſes have been rendered ſufficiently ſagacious and active to be exhibited as public ſpectacles. It is, however, the misfortune of this humble and uſeful animal, to be deſpiſed by man; though it's efforts are exerted to pleaſe him, and it's ſervices are ſo cheaply purchaſed. The horſe is the only favourite; and on him all expence and labour are beſtowed: he is fed, attended, and ſtabled; while the Aſs is abandoned to the inhumanity of the loweſt ruſtics, or even to the barbarous ſport of children; and, inſtead of gaining by the leſſons it receives, is always a loſer. It is forced along by blows; inſulted with unneceſſary ſtripes; and overloaded by indolence: and, as it falls generally to the lot of the poor, it largely participates in their wants and diſtreſſes. Thus this faithful animal, which would undoubtedly be the firſt of the quadruped kind, were there no horſe, is conſidered as of little value: all it's properties and qualifications being found elſewhere in a higher degree, the creature is entirely diſregarded; and, from being naturally the ſecond in the ſcale of utility, is degraded into the moſt inſignificant of all domeſtic quadrupeds.

Hence ſo very little attention has been paid to the improvement of the breed, that it has been ſuffered to degenerate; and it appears highly probable that the Aſs, of all other animals, is the moſt enfeebled, and rendered moſt diminutive, by being in a ſtate of domeſtic ſervitude. The horſe, the cow, and the ſheep, are rendered larger by the ſkill and aſſiduity of man; while the Aſs is permitted to dwindle in every generation. Indeed, it is with us ſo little valued, that the whole ſpecies would probably have been long ſince extinct, if the medicinal qualities of it's milk had not tempted the avarice of mankind to continue the breed. This ſalutary liquid is in ſome caſes eſteemed the moſt ſovereign, as well as the moſt innocent, of all preſcriptions: it is extremely nouriſhing and abſtergent, and therefore highly valued in hectic complaints, in diſorders of the ſtomach, abſceſſes of the kidneys, the ſtone in the bladder, and arthritic pains. It appears to be gently cathartic, and was frequently directed by Hippocrates to be uſed in large quantities where moderate purging was neceſſary. When applied as a topic, it renders the gums firm, alleviates arthritic pains, and gives the face an agreeable whiteneſs.

Were there as much care beſtowed on the Aſs as commonly falls to the ſhare of the horſe, and were the ſame induſtry uſed in croſſing the breed and improving it, there is great reaſon to ſuppoſe that we ſhould ſoon ſee the Aſs emerge from it's preſent humble ſtate, and become a very reſpectable and uſeful animal, frequently rivalling the horſe in ſome of it's qualities, and even exceeding him in others. In proportion to their reſpective magnitudes, the Aſs is conſiderably ſtronger than the horſe; ſurer-footed; and, though ſlower in it's motions, much leſs apt to ſtart out of the way.

The Spaniards ſeem to be better acquainted with the nature of the Aſs than any other nation in Europe; and, as they uſe every neceſſary precaution to improve the breed in Spain, it is no unuſual thing to meet with an animal of this ſpecies full fifteen hands high.

The Aſs ſeems to have been originally a native of Arabia, and other parts of the eaſt; and warm climates ſtill produce the largeſt and beſt. Their ſize and ſpirit both evidently decline on their removal into colder regions. 'With difficulty,' ſays Mr. Adanſon, ſpeaking of the Aſſes of Senegal, 'did I know this animal, ſo different did it appear from thoſe of Europe: the hair was fine, and of a bright mouſe colour; and the black liſt, which croſſes the back and ſhoulders, had a fine effect.' Theſe were the Aſſes brought by the Moors from the interior parts of the country.

The emigration of the Aſs has been very ſlow; and, though it is now ſo common in all parts of theſe iſlands, the breed was entirely loſt among us during the reign of Elizabeth. Holingſhed informs us that, in his time, 'our lande did yeelde no Aſſes.' But we are not to ſuppoſe that ſuch uſeful animals were unknown in theſe kingdoms before that period; for mention is made of them ſo early as the reign of King Ethelred, above four hundred years before; and again in the reign of Henry III. ſo that the breed muſt have been unaccountably loſt during the reign of Elizabeth. At what period it was again introduced, is not certain; but it was probably in the ſucceeding reign, when our intercourſe with Spain was renewed, where this animal was then much uſed, as well as at preſent. In Sweden, the Aſs appears to be a kind of rarity; nor does it appear, from the moſt recent hiſtory of Norway, that it has yet reached that country: while, in Guinea, it is larger, as well as more beautiful, than even the horſe of the ſame country. In Perſia, there are two kinds of Aſſes: one of which, uſed for burdens, is ſlow and heavy; the other, which is kept for the ſaddle, being ſtately, and nimble. They are managed in the ſame manner as horſes; except that the rider ſits nearer the crupper: and, like them, they are taught to amble. Their noſtrils are generally enlarged, in order to allow them more room for breathing; and one of them is frequently ſold for forty or fifty pounds.

The Aſs is not only more hardy than the horſe, but liable to fewer diſeaſes; and it is leſs ſubject to be infeſted with vermin than any other hairy animal; probably on account of the dryneſs and hardneſs of it's ſkin. Like the horſe, it takes three

or four years in arriving at a ſtate of perfection; and frequently lives to the age of twenty or twenty-five. It ſleeps very little, and never lies down for that purpoſe, till quite worn out with fatigue. The female goes above eleven months with young, and never brings forth more than one at a time. The mule may be engendered between a ſtallion and an Aſs, or between an Aſs and a mare; but the latter breed is every way preferable, being both larger, ſtronger, and better ſhaped. It is not as yet certain whether the animal called the gimerro be one of theſe kinds; or, as is uſually aſſerted, bred between the Aſs and the bull. While naturaliſts, however, contend for the impoſſibility of this admixture, the natives of the Alpine countries, where this animal is bred, as ſtrongly inſiſt on it's reality. The common mule is very healthy, will live about thirty years, and is extremely ſerviceable in carrying burdens; particularly in mountainous and ſtony places where horſes are ſcarcely capable of walking. The ſize and ſtrength of our Aſſes, however, is at preſent greatly improved by the importation of Spaniſh Jack or male Aſſes: and, with care and attention, we might in time equal the Spaniards themſelves in breeding them.

Aſſes, indeed, ſeem now perfectly naturalized in this country: the climate and ſoil appear perfectly to agree with them; and their utility daily becomes more and more evident. Being now introduced into many drudgeries formerly allotted to horſes, they are very ſerviceable in ſaving thoſe noble animals for higher purpoſes. Many of our richeſt mines are in ſituations almoſt inacceſſible to horſes; where theſe ſure-footed animals are employed to advantage in conveying our mineral treaſures from one place to another. We may alſo add that, ſince our horſes are become a conſiderable article of commerce, and bring great ſums annually into theſe kingdoms, the improvement of an animal which will in many inſtances ſupply the place of the horſe, as well as enable us to enlarge our exports, certainly demands the attention of every well-wiſher to his country.

ASTERIA. A name by which ſome authors have diſtinguiſhed the accipiter palumbarius, or goſhawk.

ASTERIAS, or SEA STAR. A genus of ſhapeleſs and deformed worms, forming a numerous tribe, and which aſſume different appearances at different periods. The ſame animal which at one time appears round like a ball, very ſoon after flattens as thin as a plate. All inſects of this kind are formed of a ſemi-tranſparent gelatinous ſubſtance, covered with a thin membrane; and, to an inattentive ſpectator, often appear like a lump of inanimate jelly, floating at random on the ſurface of the ſea, as if caſually thrown aſhore at the departure of the tide: but, on a more minute inſpection, they are found to be poſſeſſed of life and motion. They are ſeen ſhooting out their arms in every direction, in order to ſeize on ſuch objects as are within their reach, which they devour with great rapacity. Worms, the ſpawn of fiſh, and even muſcles themſelves, with their hard reſiſting ſhells, have been found in the ſtomachs of theſe voracious creatures; and, what is more extraordinary, though the ſubſtance of their own bodies be almoſt as ſoft as water, they are in no reſpect injured by ſwallowing theſe ſhells, which are almoſt of a ſtony hardneſs. In ſummer, when the water of the ſea is warmed by the heat of the ſun, they float on the ſurface; and in the night-time they emit a kind of luminous effluvia, reſembling that of phoſphorus. Some naturaliſts have given theſe animals the names of ſea-nettles, becauſe they irritate the hands of thoſe who touch them, after the manner of thoſe weeds. They are often found affixed to the rocks, and to the largeſt ſea-ſhells, as if they derived their nouriſhment from them. If injected into ſpirits of wine, they will continue entire for many years; but, on being expoſed to the air, they melt down, in leſs than twenty-four hours, into a limpid and offenſive liquid.

Among the whole of this ſpecies, none are found poſſeſſed of a vent for their excrements; but the ſame paſſage which admits their food, ſerves alſo for the ejection of the fæces. Theſe animals, as before obſerved, aſſume a great variety of ſhapes; ſo that it is difficult to deſcribe them under determinate figures; but their bodies in general reſemble truncated cones, whoſe baſes are attached to the rocks where they are uſually found adhering. Though generally tranſparent, they are frequently found of different colours: ſome inclining to green, others to red; ſome to white, and others to brown. In ſome, the colours appear diffuſed over the whole ſurface; in ſome they are only ſtreaked; and, in others, they are often ſpotted. They are poſſeſſed of a very ſlow progreſſive motion; and, in fine weather, they are continually ſeen expanding themſelves, and fiſhing for their prey. Many of them contain a number of long ſlender filaments, in which they entangle any ſmall animals they happen to encounter, and thus draw them into their voracious ſtomachs, which occupy the whole cavities of their bodies. The harder ſhells continue undigeſted for ſeveral weeks; but, at length, undergoing a kind of maceration in the ſtomach, they become aſſimilated with the ſubſtance of the animal. Theſe creatures may be cut in pieces, and yet every part of them will ſurvive the operation; each ſoon becoming a perfect animal, endued with the natural rapacity of the ſpecies.

Asterias, Common. The Common Aſterias, which is furniſhed with five depreſſed rays, is broad at the baſe, ſubangular, rough, and of a yellow colour, having a round ſtriated covering on the back. This ſpecies of the ſtar-fiſh, however, is ſometimes found defective, or with four rays only. It is common to the Britiſh ſeas; and generally abounds among oyſters, to which it is very deſtructive.

Asterias, Dotted. The Dotted Aſterias has likewiſe five ſmooth rays; but is diſtinguiſhed from the common ſpecies by being dotted or punctured; and is of a beautiful purple colour.

Asterias, Rimmed. The Rimmed Aſterias has alſo five ſmooth rays, but the ſides are ſurrounded with a regular ſcaly rim: on the mouth is a plate of a cinquefoil form; and the colour is ſomewhat reddiſh.

Asterias, Rough. The Rough Aſterias has five broad rays, and becomes angular at the top: the body is entirely covered with ſhort briſtles; and the colour is brown.

Asterias, Gibbous. The Gibbous Aſterias is diſtinguiſhed by five very ſhort and broad rays, ſlightly projecting: it is much elevated, and covered with a brown rough ſkin; and the mouth is ſituated in the midſt of the pentagon.

Asterias, Flat. The Flat Aſterias is furniſhed with five very broad and membranaceous rays, which are extremely thin and flat. This ſpecies has been caught near Weymouth, but is very ſcarce.

ASTERIAS, MINUTE. The Minute Aſterias has a circular body, and is provided with five very long and ſlender rough rays.

ASTERIAS, LIZARD. The Lizard Aſterias is ſo called from the ſimilitude of it's rays to the tail of a lizard; being ſmooth, ſlender, ſcaled, jointed, and white.

ASTERIAS, BEADED. The Beaded Aſterias is pentangular and indented; ſmooth above the aperture, and five-pointed below. Between the baſes of the reſpective rays, which are jointed, taper, and very rough on the ſides, there is a ſmall globular bead.

ASTERIAS, CINQUEFOIL. The Cinquefoil Aſterias, which carries it's name in it's figure, is regularly cinquefoil; and is furniſhed with very ſlender rays, which are rough on the edges, and marked with green both above and below.

ASTERIAS, PIED. The Pied Aſterias has a circular body, with ten radiated ſtreaks: the extremities are in the form of a lozenge; and the rays are hiſpid, and annulated with red.

ASTERIAS, JAVELIN. The Javelin Aſterias has a pentagonal and indented body, of a deep brown, marked with ten ſtreaks of a reddiſh hue; five of which are extremely ſlender, and terminate in points reſembling javelins.

ASTERIAS, RADIATED. The Radiated Aſterias is diſtinguiſhed by a round body, with ſtreaks iſſuing from it's centre, alternately broad and narrow; having five ſlender and hiſpid rays.

ASTERIAS, INDENTED. The Indented Aſterias has a circular body, marked with five equidiſtant indentations, which penetrate deep into the ſides; five light-coloured ſtreaks iſſue from the centre; and the rays are rough and ſlender.

ASTERIAS, BLACK. The Black Aſterias is diſtinguiſhed by the colour of it's body, from which it receives it's name, and five radiating ſtreaks of white; the rays are rough, and of an olive colour, but teſſelated with deeper ſhades.

ASTERIAS, BIFID. The Bifid Aſterias has ten ſlender rays, beſet with tendrils on their ſides; and the mouth is ſurrounded with ſhort rays reſembling threads.

ASTERIAS, TEN-RAYED. The Ten-rayed Aſterias is furniſhed with ten very ſlender rays, having a great number of long beards on their ſides; and the body is minute, and encircled beneath with ten ſmall filiform radiations.

ASTERIAS, TWELVE-RAYED. The Twelve-rayed Aſterias contains twelve broad and finely reticulated rays, rendered hiſpid, with faſciculated papillæ on the ſuperior part; and, on the inferior, it is red and hirſute. The ancient naturaliſts, according to Ariſtotle, gave the names of Aſter, and Stella Marina, to this ſpecies of Aſterias, from their reſemblance to the pictured form of the ſtars of Heaven; and they alſo ridiculouſly fancied them poſſeſſed of ſo much heat, as to be capable of conſuming whatever came in contact with them.

ASTERIAS, ARBORESCENT. The Arboreſcent Aſterias is furniſhed with five rays iſſuing from an angular body; which are ſubdivided into innumerous ramifications, growing more ſlender as they approach the extremities. This ſpecies is by far the moſt curious of the whole genus: it is frequently caught on the coaſts of Scotland; and it has ſometimes been met with on the Corniſh ſhores.

ASTRILD. A name given to a particular ſpecies of the loxia.

ASTURIS. A name uſed by Ray, and ſome other naturaliſts, to expreſs the accipiter palumbarius, or goſhawk.

ASYLUS. A term by which ſome naturaliſts denote the gad-fly.

ATHERINE. A name given by Rondeletius, and ſome other naturaliſts, to the hepſetus, or anguella, a ſmall fiſh common on the ſhores of the Mediterranean. Bellonius, however, appropriates it to a very different genus.

In the Linnæan ſyſtem, the Atherine falls under the order of abdominales, and comprehends two ſpecies; viz. the hepſetus, and the menidia. The former, which is very common in the ſea near Southampton, is there called a ſmelt; and the ſeaſon of it's higheſt perfection is from the beginning of March to the end of May, or the beginning of June, when it uſually ſpawns. It never quits thoſe parts of the ſea, and may be conſtantly caught, except during a very hard froſt. It is not, however, entirely confined to this ſpot; but is ſometimes found on other coaſts of this iſland. It meaſures about four inches and a half in length; the back is ſtraight, and furniſhed with two fins; the belly is ſomewhat protuberant; and the tail is conſiderably forked. This fiſh is of a ſilvery colour tinged with yellow, ſemipellucid, and covered with ſcales: the ſide-line is ſtraight; and below it there is a row of ſmall black ſpots. The latter ſpecies of the Atherine is found in the freſh-waters of Carolina, and is called by Garden the ſilver-fiſh.

ATINGA GUACU MUCU. A Brazilian bird, about the ſize of a thruſh. The head is large; the bill, which is of a greeniſh yellow colour, is ſomewhat hooked; the eyes, which are ſanguine, have black pupils; and the tail, which is remarkably long, conſiſts of about ten feathers, ſome of the lower ones being ſhorteſt, but others, as well as all the upper ones, full nine inches. The head, neck, back, wings, and tail, have brown, or rather ſoot-coloured feathers, which are darkeſt in the tail; where, likewiſe, every feather, for about half an inch, is white and red, divided with ſhades of black. The throat, breaſt, belly, and thighs, are cinereous; and, on the head, there are long feathers, which the bird is capable of erecting, ſo as to appear like two horns. The legs, which are aſh-coloured, are of a moderate length; and the feet have each four toes, diſpoſed after the uſual manner. Willughby, from the ſimilarity of ſize, the conformation of the bill, and other reſemblances, eſteems it of the thruſh kind; but ſome other naturaliſts have referred it to the ſtarling tribe.

ATRICAPILLA. The name of a ſmall bird, commonly called the black cap; deſcribed by ſome authors under the appellation of ficedula ſycalis, or melancholyphus; and, by the Italians, under that of caponegro.

ATRICILLA. A ſpecies of the laurus.

ATTAGEN. A very beautiful bird, deſcribed by Aldrovandus; and called by the Italians Francolini, or Free Fowl, becauſe the vulgar are reſtricted from taking it. The Attagen, as well in ſize as in the entire conformation of it's body, reſembles the pheaſant. It has a ſhort black bill, crooked at the end; a fine creſt of yellow feathers, variegated with black and white ſpots, is erected on the top of it's head; the eyes, which are black, have yellow irides; and the eyebrows, like thoſe of the heathcock, are compoſed of naked ſcarlet-coloured ſkin. Under the bill, and in the beginning of the throat, hangs a tuft or beard of fine feathers; the neck, which is long and rather ſlender,

is cinereous, variegated with black and white ſpots; the ſpots of the breaſt are the ſame, but having a ferrugineous mixture; and the belly, tail, and thighs, are of a lead colour ſpotted with black. The fore-toes of the feet are long, the back-toe is ſhort; and they are all armed with crooked claws.

The Attagen is found plentifully in the mountains of Sicily, and ſeems to be a ſpecies of our red game.

Bellonius and Scaliger have both mentioned the Attagen; and Martial and Ariſtophanes repreſent it as the moſt delicious bird ſerved up at public entertainments. Trallian recommends it in conſumptive complaints; Galen, in nephritic diſorders; and Avicenna is of opinion that it increaſes the ſeminal ſecretions. The fleſh is certainly delicious, nutritive, and eaſy of digeſtion, to a very high degree.

ATTELABUS. A genus of inſects belonging to the order of coleoptera, in the Linnæan ſyſtem, and including thirteen ſpecies. The head is attenuated and inclined; and the antennæ are thickeſt towards the apex.

ATTILUS. A river fiſh of the ſturgeon kind, called by ſome authors adello, adano, and adeno. It grows to a very large ſize; and, when it has attained it's full dimenſions, it caſts it's ſcales, and ever after remains perfectly ſmooth: in which reſpect it certainly differs from the common ſturgeon. It ſeems, however, to agree in every eſſential point with the huſo Germannorum. It is eſteemed proper for food; but is much inferior in flavour and taſte to the ſturgeon.

ATTINGA. A ſpecies of diodon, in the Linnæan order of nantes.

AVIS. The claſſical name for a bird.

AVIS LONGA. A name uſed by Nieremberg to expreſs the hoctlattotl of the Americans; a bird remarkable for it's ſwiftneſs in running.

AVIS NIVEA. A name under which Nieremberg has deſcribed an American bird, of the ſize of a thruſh; variegated with black and brown on the back, and yellow under the belly. It imitates the human voice, and is called ceoan by the natives.

AVIS PENNIPULCHRA. The name of an American bird deſcribed by Nieremberg, called by the Indians quetzaltototl. It grows to the ſize of a pigeon; and it's whole body is covered with the moſt beautiful pavonaceous plumage. There are three or four different ſpecies of this genus: Ray, however, has ranged all of them under the number of birds whoſe natural hiſtory is either uncertain or but little known.

AVIS TROPICORUM. A bird of the ſize of the common duck, to which the Engliſh commonly give the name of the tropic bird. It is only found within the tropics, and thence it obtains it's name.

AVOSETTA. A very curious bird chiefly found in Italy, but an occaſional viſitant of the Britiſh iſles. It is about eighteen inches long from the head to the extremity of the tail; very erect; and furniſhed with legs unuſually long for it's ſize. The bill turns up like a hook, in an oppoſite direction to that of the hawk or parrot, and widely different from that of any other bird whatever. This extraordinary bill, which is black, flat, ſharp, and flexible at the extremity, is about three inches and a half in length. The tongue is ſhort; the head, as well as half the hind part of the neck, is black; all the under ſide of the body is of a pure white; the back, the coverts on the ridge of the wings, and ſome of the leſſer quill-feathers, are of the ſame colour; and the other coverts, with the exterior ſides and ends of the greater quill-feathers, are black. The tail conſiſts of twelve white feathers; the legs, which are of a fine blue colour, are naked higher than the knees; and the webs are duſky, and deeply indented.

The Avoſetta feeds on worms and inſects, which it ſcoops out of the ſand with it's bill: and it's progreſs in ſearch of food is frequently to be diſcerned in the ſand by the appearance of alternate ſemicircular marks. It lays two eggs, about the ſize of thoſe of the pigeon, which are white tinged with green, and marked with large black ſpots.

Theſe birds are frequently obſerved in winter on the eaſtern ſhores of this kingdom: ſometimes in Glouceſterſhire, at the mouth of the Severn; and at others on the lakes of Shropſhire. When diſturbed, they fly backwards and forwards over the heads of thoſe who have excited their apprehenſion of danger, after the manner of the lapwing, carrying their necks and long legs quite extended, and making a ſhrill noiſe, continually reiterated; for which reaſon the country people uſually call them yelpers, and ſometimes picarini.

AUK. An aquatic bird, of which there are ſeveral ſpecies: particularly, the Large Auk; the Common Auk, or Razor-bill; the Black-billed Auk; and the Little Auk.

AUK, LARGE. The Large Auk breeds in the Iſle of St. Kilda, where it appears about the beginning of May, and retires about the middle of June. It lays only one egg, about ſix inches long, which is of a white colour, marked with purple lines, and ſometimes with ferrugineous ſpots; and, if this egg be removed, it ſeldom lays another during that ſeaſon. It has been obſerved, that this bird does not make an annual viſit to that iſland, but has ſometimes been abſent for ſeveral years ſucceſſively; that it depoſits it's egg cloſe to the ſea-mark; and that it is among the moſt inattentive of all the feathered race to the propagation of it's ſpecies, and the care of it's young.

This curious bird is about three feet long; and the bill is upwards of four inches. The upper mandible is partially covered with ſhort black velvet-like feathers, and is very ſtrong. Between the eyes and the bill, on each ſide, there is a large white ſpot: the reſt of the head, neck, back, tail, and wings, are of a beautiful gloſſy black; and the tips of the leſſer quill-feathers, together with the whole underſide of the body, are white. The wings being only about four inches long, are conſequently of little ſervice for flight: hence this bird is ſeldom found far from the ſhores; and on land it appears incapable of aſcending to any conſiderable height by the aſſiſtance of it's wings.

AUK, COMMON, or RAZOR-BILL. This fowl is about eighteen inches long, and twenty-ſeven broad. The bill, which is two inches in length, and of a black colour, is very ſtrong, and ſharp at the edges; the upper mandible being marked with four tranſverſe grooves, and the lower with three. The head, throat, and entire upper ſide of the body, are black; the wings and tail are likewiſe black; except the tips of the leſſer quill-feathers in the former, which are quite white. The whole under-ſide of the body is white.

Theſe birds ſeldom begin to breed till May, though they generally appear, in company with the guillemot, early in February. They fix their abodes on the extreme margins of lofty rocks hanging over

over the ſea; where they form a very groteſque appearance, from the ſingular order of the rows in which they ſit one above another. The eggs afford a conſiderable ſhare of ſubſiſtence to the natives of the coaſts which theſe fowls frequent, though they are taken with the moſt imminent danger. The reſolution and activity theſe people ſhew in acquiring this part of their food, almoſt exceed the bounds of credibility. The eggs are generally depoſited in ſuch ſituations, that there is no poſſibility of procuring them without being lowered by ropes, the adventurer truſting to the ſtrength of his companions for his preſervation from deſtruction: and, indeed, the unſtable nature of the footing is ſuch, that the moſt horrid cataſtrophes have frequently occurred, the protectors and protected being at once hurried down the ſteep, daſhed to pieces againſt the rocks, and precipitated into the ocean.

The Razor-bill lays but a ſingle egg, which is of an extraordinary ſize in proportion to the bulk of the bird, and generally white, though ſometimes of a pale ſea-green, irregularly ſpotted with black. However, when this egg is taken or deſtroyed, it produces another to ſupply it's place; and, on loſing that, it even lays a third. It builds no neſt, but depoſits it's egg on the edge of a rock with ſuch nice equilibrium as to ſecure it from rolling off; and this is done with ſo much art, that if an egg is removed, and attempted to be replaced by the human hand, it is always extremely difficult, and ſometimes abſolutely impoſſible, to place it exactly in the ſame ſituation.

Auk, Black-Billed. This bird, which is only fifteen or ſixteen inches long, is full twenty-five in breadth. The cheeks and throat are white; and the bill is black: but in almoſt every other reſpect it coincides with the former ſpecies, to which ſome naturaliſts think it ought to be referred, notwithſtanding theſe variations.

Auk, Little. This extraordinary fowl is about the ſize of a common blackbird. The bill, which is convex, ſhort, and thick, is of a black colour; and the legs and feet are covered with dirty greeniſh white ſcales, the webs being black. The crown of the head, hind part of the neck, entire back, and tail, are quite black; the wings are likewiſe black, except the tips of the leſſer quill-feathers and the inner coverts of the wings, the former of which are white and the latter grey; the cheeks, throat, and under parts of the body, are all white; and the ſcapular feathers are white and black.

This bird is deſcribed by Willughby under the appellation of the ſmall black and white diver with a ſhort ſharp-pointed bill; who adds to the above account, that the tail is ſhort and a little white on each ſide, and that the bird is not very common.

Edwards has likewiſe noticed a bird that varies in a very ſlight degree from the Little Auk; and one, which he imagines differs only in ſex: the head and neck of the latter being wholly black, and the inner coverts of the wings barred with a dirty white.

AULOS. A name by which ſeveral of the ancient writers have called the ſolen or razor-fiſh.

AURA. A ſpecies of vulture.

AURANTIUS PISCIS. A name which Nieremberg applies to the dorado, or dolphin; a ſpecies of the coryphæna, diſtinguiſhed from the others by it's forked tail.

AURATA. A name ſometimes given to the gilt-head.

AURICULA. See Earwig.

AURIS ASINI, or ASS'S EAR. A name given to a ſpecies of ſhell-fiſh, of the order of murex, ſuppoſed to bear ſome reſemblance to the Ear of the common Aſs.

AURIS MARINA. The ear-ſhell, or ſea-ear.

AURIS PORCI. A name given by ſome naturaliſts to a ſea-ſhell of the family of murex, from it's reſemblance to the ear of a hog.

AUSTURCUS, or OSTERCUS. The claſſical name ſometimes applied to denote the goſhawk: from whence falconers, who keep that ſpecies of hawk, are denominated Oſtringers.

AXIS. A very beautiful animal of the deer kind, found in Africa and the Eaſt Indies, and of which naturaliſts obſerve two or three varieties.

Axis, Common. This ſpecies is about the ſize of a fallow-deer, and of a light red colour. The body is beautifully variegated with white ſpots, and the lower part of the ſides next the belly is marked with a line of white. The tail, which is about the length of that of the fallow-deer, is red above and white beneath. The horns are ſlender, and triple-forked; the firſt ramification being near the baſe, and the ſecond near the top, each pointing upwards. It inhabits the banks of the Ganges, and the Iſle of Ceylon: though it ſeems to bear the European climates without injury; and has even been bred in the menagerie of the Prince of Orange, near the Hague. It is extremely docile, and poſſeſſes the ſenſe of ſmelling to a very exquiſite degree. It eats bread with avidity; but, from the quality juſt mentioned, will refuſe a piece which has been breathed on.

Axis, Great. This animal, which is a native of Borneo and Ceylon, is about the height of a horſe, and of a reddiſh brown colour. The horns, which are trifurcated, thick, ſtrong, and rugged, are about two feet nine inches long, and two feet four inches between tip and tip.

This ſpecies frequents the low marſhy places in Borneo; for which reaſon it is called, in the Javan and Malayan languages, mejangan banjoe, or the water ſtag.

Axis, Leſſer. The Leſſer Axis is generally of the ſame colour with the former, but ſometimes varies to white.

This is a gregarious animal, and inhabits Java, Ceylon, Borneo, and ſome other oriental iſlands. In Java and Celebes it is hunted with ardour, and affords the higheſt diverſion. The fleſh, which is eſteemed excellent food, is uſually cut into pieces, dried in the ſun, and preſerved in ſalt.

AXOLOTI. A ſingular ſpecies of fiſh found in the lakes of Mexico; which is furniſhed with four feet like a lizard; has a matrix like a woman, as well as the menſtrual flux; and is deſtitute of ſcales. It's fleſh taſtes like that of the eel; and, notwithſtanding it's very peculiar conformation, it does not ſeem to poſſeſs any noxious qualities.

AYGULA. A ſpecies of ape.

AZOOPHAGUS. A term uſed by ſome naturaliſts to expreſs ſuch animals or inſects as feed entirely on herbs, and never taſte the fleſh of any living creature. This term is therefore perfectly ſynonimous with herbivorous; and is applied in oppoſition to ſuch animals as are naturally carnivorous.

B.

BABOON. The Baboon, which compoſes the ſecond diviſion of the monkey kind, is a large, fierce, and formidable race: and the human figure, as well as that of the quadruped, being blended in it's conformation, it ſeems only to poſſeſs the defects of both; all the native petulance of the former, and all the ferocity of the latter. In man, the leading features do not always indicate the temper of the mind; but, in animals, phyſiognomy is leſs liable to deceive: their diſpoſitions may be gathered from their looks, and their internal propenſities from their external forms. Viewing the ape and the Baboon in this light, it will evidently appear that they conſiderably differ in their diſpoſitions; and that the latter is infinitely more fierce, ſavage, and malicious, than the former. The ourang-outang, which ſo nearly reſembles man in it's figure, of all irrational animals, approaches the neareſt to him in the gentleneſs of it's manners, and the docility of it's temper. The Barbary ape, which is the moſt diſtant of all it's tribe from the human form; and, with reſpect to it's face, approaches nearer the dog; bears alſo, in it's nature, a ſtrong reſemblance to the brute, being wild, reſtleſs, and impetuous, in all it's motions: while the Baboon, which is ſtill farther remote from it's ſimilarity to man, in having a tail, a prominent face, and ſharp claws, approaches alſo nearer to the ſavage tribe in it's manners, and is extremely fierce, indocile, and miſchievous.

The Baboon, properly ſo called, grows from three to four feet in height, is very ſtrong built, has a thick body and clumſy limbs, with canine teeth of a diſproportionate magnitude. It has large calloſities behind, which are quite naked and red; it's tail is thick and crooked, and about ſeven inches long; it's ſnout (for it can hardly be conſidered as a face) is long and thick; and it has a pouch on each ſide of it's cheeks, in which it depoſits the remainder of it's proviſions after having gormandized ſufficiently. It's hair, which is of a reddiſh brown colour, is pretty uniform over it's whole body. It very ſeldom affects an erect poſture; and, inſtead of broad round nails, like thoſe of the ape, it's hands, as well as feet, are armed with long ſharp claws. Thus formed for ſtrength, and furniſhed with dangerous natural weapons, this animal, in it's native haunts, proves itſelf to be one of the moſt formidable of the ſavage race. In this ſtate, it appears to be actuated by two very oppoſite paſſions; an averſion to men, and a libidinous deſire for women. Theſe ſtrange contrarieties in it's diſpoſition might appear very queſtionable, if they reſted on the teſtimonies of only one or two naturaliſts; but, as they are authenticated by the moſt credible and unbiaſſed, as well as the moſt inquiſitive, obſervers of nature, we cannot refuſe them our aſſent. From ſuch authorities we learn, that theſe animals often attack women in bodies, and force them into the woods, where they confine them; and, if refractory, put them to death. We are informed by the Chevalier Forbin, that, in Siam, whole troops of theſe Baboons will often ſally forth from their native woods, and attack the women of a whole village, when they know the men are abſent on any expedition, or engaged in the rice harveſt. On ſuch occaſions, they ſeem actuated by deſire, as well as by hunger; and not only plunder the houſes of what proviſions they can find, but alſo endeavour to violate the women. The latter, however, as the Chevalier humorouſly relates, diſliking either the manner or the figure of their beaſtly gallants, boldly ſtand on the defenſive, and with clubs, or whatever arms they can provide, inſtead of meeting their careſſes, ſoon compel them to retreat. The Baboons of Africa are certainly leſs formidable than thoſe of Siam; their ſtrength being inferior, and their power of doing miſchief conſequently leſs. At the Cape of Good Hope they ſeem under a kind of natural diſcipline, performing whatever they undertake with ſurprizing ſkill and regularity. When they ſet about plundering an orchard or a vineyard, they do not go individually to work, but in large companies, and with preconcerted deliberation. On ſuch occaſions, while ſome enter the incloſure, one is ſtationed as a centinel, and the reſt ſtand without the fence, and form a line reaching to their rendezvous, which is generally in ſome contiguous craggy mountain. Every meaſure being thus ſettled, the plunderers within the orchard throw the fruit to thoſe who are without, as quick as they can gather it; which being pitched from one Baboon to another, all along the line, with ſurprizing expedition, it is ſpeedily depoſited in their head-quarters. While this buſineſs is carrying on, the moſt profound ſilence is obſerved among the whole fraternity; and if the centinel, who continues aſſiduouſly on the watch, and is extremely anxious and attentive to every motion, perceives any enemy approaching, he inſtantly ſets up a loud cry, at which ſignal the whole company precipitately retreat. They are not, however, on any account inclined to leave the place empty-handed, but carry off as much fruit as they conveniently can in their mouths, their hands, and under their arms. If the purſuit is continued, and they are in danger of being overtaken, they firſt drop the fruit which is lodged under their arms; next, that which is in their hands; and, laſtly, what they have concealed in their mouths.

Theſe animals, however, are by no means incapable of being tamed, and rendered ſubſervient to ſome beneficial purpoſes. The natives of the Cape of Good Hope ſometimes catch them when young; and, feeding them with ſheep and goats milk, accuſtom them to guard their houſes; a ſervice they perform with extraordinary punctuality and fidelity. But thoſe which we have ſeen imported into Europe are uſually head-ſtrong, rude, and untractable. Animals in general, when they have committed any miſchief, indicate their ſenſe of it, by running away; but theſe, ſeemingly careleſs and inſenſible, never appear conſcious of having acted amiſs.

Buffon gives us the following deſcription of an animal of this kind. 'It was not (ſays he) remarkably ugly, and yet it's aſpect excited horror. It continually appeared in a ſtate of ſavage ferocity, gnaſhing it's teeth, darting at the ſpectators, and furiouſly reſtleſs. It was obliged to be confined in an iron cage, the bars of which it forcibly attempted to break; ſo that ſpectators were filled

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1. BROWN BABOON. 2. LARGE BABOON. 3. LION-TAILED BABOON. 4. WOOD BABOON.

5. BABYROUSSA. 6. COMMON BADGER.

Plate X.

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filled with apprehension. It was a ſtrong, bold animal, whoſe ſhort limbs and powerful exertions ſhewed vaſt ſtrength and agility. The long hair with which it was covered, ſeemed to aſſiſt it's miſchievous ability; which, however, was in reality ſo great, that it could eaſily overcome a ſingle man, unleſs he was properly armed. In other reſpects, it always appeared excited by that paſſion which at intervals will render the mildeſt animals furious and untractable. It was inſolently laſcivious, and gratified it's ſtrong deſires in public. It ſeemed alſo to make a parade of it's nakedneſs, oftener preſenting it's poſteriors, than it's head, to the view of the ſpectators.

But however violent the deſires of theſe creatures may be, they are by no means prolific in this climate. The female uſually brings forth only one at a time, which ſhe carries in her arms, clinging to her breaſt in a peculiar manner. As to the other qualities of the race of Baboons, they do not by any means appear carnivorous; they principally ſubſiſt on fruits, roots, and corn; and generally herd together in companies. Their internal ſtructure is more unlike that of men than of quadrupeds; particularly the liver, which is divided into ſix lobes, like that of a dog. The lungs are alſo more divided; the guts, in general, are ſhorter; and the kidnies are more round and flat.

The different ſpecies of Baboons are very numerous, if we may give credit to ſome naturaliſts, who ſeem more ambitious of ſwelling the catalogue of their names, than of elucidating the nature and habits of the animals.

Baboon, Large, or Papio. The Large Baboon has a canine and very thick face, in ſome parts of a bright vermilion colour, and ending truncated like that of a hog. The ears and mouth are ſmall; the irides are of a hazle colour; but the cheeks, throat, and beard, are yellow. The hair on the forehead is extremely long and black, and forms a kind of pointed creſt. The head, arms, and legs, are covered with ſhort black and yellow hair intermixed; and the breaſt with long whitiſh hairs of a yellow tinge. The feet and hands are black; and the nails are flat. The buttocks are red, bare, and obſcene; but the ſpace above them is covered with beautiful purple hair. The creature grows to near five feet in height; poſſeſſes very formidable powers; is endowed with extraordinary ſtrength; and is naturally fierce, libidinous, and indocile.

Schreber informs us, that this animal lives on ſucculent fruits and nuts; that it is extremely fond of eggs; that it will drink immoderate quantities of wine or brandy; but that it rejects all ſorts of fleſh, unleſs previouſly dreſſed. This ſpecies is a native of the warmer climates of Africa.

Baboon, Maimon, or the Mandril of Buffon. This is an ugly, diſguſting animal, which grows to a conſiderable ſtature. The muzzle is longer than that of the preceding. It is of a blueiſh colour, and ſtrongly marked with wrinkles, which gives it a very hideous aſpect. But the creature is rendered moſt inexpreſſibly loathſome by a kind of ſnot continually iſſuing from it's noſe, which it licks off at intervals with it's tongue, and ſwallows. It is a native of the Gold Coaſt; more frequently walks erect than on all-fours; and, when diſpleaſed, is ſaid to expreſs it's ſorrow by a kind of infantine complaint. Some years ago, one of this ſpecies was exhibited in England: it appeared tame, but ſtupid; and had contracted a habit of opening it's mouth, and blowing on thoſe who approached it.

Linnæus places this animal among his ſimiæ caudâ elongata; and applies ſomewhat different ſynonyma to it: however, there cannot remain a doubt that this is his ſimia maimon.

Several varieties of this ſpecies of Baboons have been deſcribed by different authors; but their accounts are ſo contradictory, that we chuſe to paſs them over in ſilence.

Baboon, Wood. This animal has a long canine face, which is covered with a gloſſy black ſkin: the hands and feet, which are naked, are of the ſame colour with the ſkin of the face. The hair of the whole body is long, and elegantly mottled with black and tawny. The height of this animal is three feet; and it's tail is about three inches long. This ſpecies inhabits Guinea; and is called by Europeans the man of the wood.

The Yellow, Cinereous, and Brown Baboons, differ chiefly from that juſt deſcribed in their reſpective colours; from which they receive their ſeveral names.

Baboon, Little. The Little Baboon has a roundiſh head, projecting mouth, and round and naked ears. The thumbs are cloſe to the fingers; the nails of the fingers are narrow, and compreſſed; and thoſe of the thumbs are rounded. It has a brown face, with a few ſcattered hairs; the colour of the hair on the body is yellowiſh, tipped with black; the tail is about an inch long; and the buttocks are covered with hair. Linnæus ſays that it is about the ſize of a ſquirrel; but Mr. Balk aſſerts that it is as large as a cat. This ſpecies is a native of India, and is extremely lively.

Baboon, Crested. The Creſted Baboon has very long and diſhevelled hair on it's crown; it's cheeks are of a duſky colour; the breaſt is whitiſh; and the reſt of the body, together with the limbs, are covered with long black hair. The face is black and naked; and the tail is ſlender, taper, and about ſeven inches long. This animal inhabits Africa; and is about two feet long.

Baboon, Pigtail, or the Maimon of Buffon. This creature, in ſize and conformation, approaches very near to the monkey tribe, being no larger than a cat. It's chief diſtinction, excluſive of it's prominent viſage, like the Baboon race, is in the tail, which is about ſix inches long, and curled up like that of a hog; from which circumſtance it has obtained it's name. It's face is naked, and of a ſwarthy redneſs; it has two ſharp canine teeth, and ears like the human ſpecies. The crown of the head is duſky; the limbs and body are brown, inclining to cinereous; the fingers are black; the nails are long and flat; and the thumbs on the hind-feet are very long, and connected to the neareſt toe by a broad membrane.

This animal, which is a native of Sumatra and Japan, does not ſeem capable of enduring the rigours of this climate. Edwards, however, kept one of them a whole year in London; and another of them happening at the ſame time to be expoſed in an exhibition of wild-beaſts, he brought the two exiles together, to ſee if they could claim acquaintance, or acknowledge their kindred; when theſe creatures, the moment they ſaw each other, teſtified their mutual ſatisfaction, and expreſſed the utmoſt joy at the interview. This is a very docile animal; and, in Japan, is taught ſeveral tricks, and carried about by the mountebanks. Keempfer was informed by one of theſe people, that the Baboon he owned was a hundred and two years old.

Baboon, Dog-Faced. The Dog-faced Baboon has

has a long thick noſe, covered with a ſmooth red ſkin; the nails on the fore-feet are flat, and thoſe on the hind-feet are like a dog's. The head is large and flat; and the hair on the cheeks, and as far down as the middle, is of a grey and olive colour, very long and ſhaggy. The buttocks, which are bare, are covered with a ſkin of a bloody hue; and the tail is pretty long, and generally carried erect.

This ſpecies, which inhabits the hotteſt parts of Africa and Aſia, is very fierce and dangerous. They herd together in large companies, and commit numerous depredations with a ſagacity and method altogether aſtoniſhing. They are equally deteſtable in their manners and in their appearance, being impudent, indecent, and laſcivious. Some of them grow to upwards of five feet in height; and are ſo ſtrong, that a man would be but a feeble opponent, if reaſon did not give him an advantage over ſtrength merely brutal. One of theſe creatures, which was exhibited in London ſome years ago, manifeſted it's deſire for women in a moſt aſtoniſhing manner. A footman, who had taken his ſweetheart to ſee the animal, on perceiving this propenſity, kiſſed her, and folded her in his arms, purpoſely to teaze it; when the Baboon, enraged at being ſo tantalized, ſeized a pewter pot, and threw it with ſuch force and addreſs at it's rival, that if the man's hat and wig had not moderated the blow, his ſcull muſt inevitably have been fractured.

Baboon, Bear. This creature has a large head, and a long noſe; that part of the head which projects over the forehead is prominent, and terminates in a ridge, which is covered with long erect hairs; and, indeed, the whole body of the animal is cloathed with ſuch long ſhaggy hair, that at firſt ſight it appears like a bear, from which fancied reſemblance it receives it's name. This ſpecies inhabits the Cape of Good Hope, where it is both numerous and miſchievous; but, when confined, it becomes tolerably tame; though, on every ſlight provocation, it diſcovers a moſt revengeful and malicious diſpoſition.

Baboon, Lion-Tailed. The Lion-Tailed Baboon, which has a face like that of a dog, is naked, and of a duſky colour. It's nails are flat; and it's tail is terminated with a tuft of hair like that of the lion. But the moſt diſtinguiſhing peculiarity in this animal is, it's large white, coarſe, rough beard; the colour of the reſt of the body being black, except the belly, which appears of a light hue. It is a native of the Eaſt Indies, and the warmer African climates; and ſeems in almoſt every reſpect to anſwer the deſcription of the animal to which Buffon gives the name of the wanderow.

BABYROUSSA. This animal, which is ſometimes called Porcus Indicus, or the Indian Hog, has generally been referred by naturaliſts to the hog genus, though it ſeems eſſentially different; having neither the hair, the briſtles, the head, the ſtature, nor the tail, of a hog. It's legs are conſiderably longer; it's ſnout is ſhorter; it's body is more ſlender, and ſomewhat reſembles that of a ſtag; it's hair is finer, and of a greyiſh colour, rather reſembling wool than briſtles; and it's tail is tufted with the ſame. From theſe variations, therefore, we can ſcarcely conſider it as a hog. It has alſo four enormous tuſks, growing out of each jaw; the two largeſt from the upper, and the two ſmalleſt from the under. The jaw-bones, from whence theſe moniſtrous tuſks proceed, are very thick and ſtrong, and ſeem to diſtinguiſh it from all other quadrupeds whatever. The two tuſks which proceed from the lower jaw are only about ſix inches long; while thoſe of the upper exceed eighteen. They have a circular bend like thoſe of the boar, and the two lower ones ſtand in the jaw of the Babyrouſſa in the ſame manner as they are ſaid to do in the above animal; but the two upper ones riſe from the upper-jaw rather like horns than teeth; and, bending upwards and backwards, have their points ſometimes directed to the animal's eyes, and often prove fatal by growing into them. Were it not that the Babyrouſſa has two ſuch large teeth underneath the two upper, they would naturally be conſidered as horns; and, in fact, as their ſockets are directed upwards, Dr. Grew was induced to adopt that opinion. But, as the teeth of both jaws are of the ſame conſiſtence, and as they both proceed from ſockets after a ſimilar manner, the analogy between them is too ſtrong to ſuppoſe that they are of a different nature. The upper-teeth, when they leave their ſockets, immediately pierce the ſuperior lip of the animal, and grow as if they immediately roſe from the cheek. The tuſks in both jaws are of a very fine ivory, ſmoother and whiter than that of the elephant, but neither ſo hard nor ſo durable.

From theſe enormous tuſks this animal derives a very formidable appearance; and yet it is accounted much leſs ferocious than the wild boar. Like animals of the hog kind, it is gregarious, and often ſeen in company with the wild boar; with which, however, it is never known to engender. It has a very ſtrong ſcent, which immediately diſcovers it to the hounds; and, when purſued, it growls dreadfully, often turning back on the dogs, and wounding them with the tuſks of it's lower jaw, thoſe of it's upper being rather an obſtruction than a defence. It is infinitely ſwifter than the boar; and has a more exquiſite ſcent, winding the men and dogs at a very remote diſtance. When hunted cloſely, and in apparent danger, it will, if poſſible, plunge into the ſea, where it ſwims with great ſwiftneſs and facility, diving and riſing alternately; and in this manner it frequently eſcapes it's purſuers. Though fierce and formidable when offended, it is, when unmoleſted, peaceable and innoxious: it is eaſily tamed; but it's fleſh, though generally eſteemed ſalubrious, is ſaid to become putrid in a very ſhort time. It repoſes in a way very different from that of moſt other large animals; hitching one of it's upper tuſks on the branch of a tree, and then ſuffering it's whole body to ſwing down at eaſe. Thus ſuſpended by a ſingle tooth, it continues quite ſecure during the whole night, and out of the reach of ſuch animals as hunt it for their prey.

The Babyrouſſa, however, though ſeemingly a hoſtile creature, and probably carnivorous, appears nevertheleſs to live chiefly on the leaves of trees and vegetables. It ſeldom, like the boar, attempts to break into gardens, in order to pillage them of the more ſucculent productions of human induſtry; but lives remote from the abodes of men, contented with perſonal ſecurity, and the humbleſt fare. It has been aſſerted by ſome naturaliſts, that the Babyrouſſa is found only in the Iſland of Borneo; but this aſſertion is undoubtedly erroneous, as this animal is well known in many other parts both of Aſia and Africa, particularly in Celebes, Senegal, and Madagaſcar.

BACCHUS. A name given by ſome naturaliſts to the myxon, a fiſh of the mullet kind, remarkable for the red colour of it's lips, and the extremity of the covering of the gills.

BACTRIANUS. A ſpecies of the camel.

BADGER,

BADGER. This animal, termed mells, or taxus, in the Linnæan ſyſtem, is deſcribed as a ſpecies of the urſus, called in different parts of England, the brock, the gray, and the pate. It's legs are ſo very ſhort, that it's belly ſeems to touch the ground; but this is in fact a deception, occaſioned by the length of it's hair, which makes the creature appear much more bulky than it really is.

The Badger is a ſolitary, ſtupid animal, ſeeking refuge in the moſt ſequeſtered places, where it digs a deep hole with remarkable aſſiduity. It ſeems averſe to the light, and ſeldom quits it's retreat till the night ſeaſon, when it ſteals from it's ſubterraneous abode for the purpoſe of procuring ſubſiſtence. It's legs being ſhort and ſtrong, and it's claws ſtiff and horny, it burrows in the ground with the greateſt facility. As it continues to bury itſelf, and to throw the earth behind it to a great diſtance, it forms for itſelf a long winding hole, at the bottom of which it remains in ſecurity. The fox being leſs expert at digging into the earth, frequently avails itſelf of the labours of the Badger; and, as ſome aſſert, forces the Badger from it's retreat, by depoſiting it's own excrements at the entrance of the hole.

The Badger, however, is not long in forming a new habitation; from which it ſeldom ventures far, as it is by no means remarkable for it's fleetneſs. When it is ſurprized by dogs at any great diſtance from it's hole, it combats them with deſperate reſolution, falling on it's back, and defending itſelf in that poſture to the laſt extremity. It ſleeps away the greateſt part of it's time; by which means, without poſſeſſing a very voracious appetite, it always appears fat and plump, particularly in winter: it is alſo remarkable for it's cleanlineſs. The female breeds in ſummer, and generally produces three or four young ones at a time, which at firſt ſhe nouriſhes with her own milk, and then gradually habituates them to ſuch humble prey as ſhe can procure; ſeizing young rabbits in their warrens; robbing birds neſts; finding out where the wild bees have laid up their honey; and bringing the whole plunder to her famiſhed brood. Though old Badgers always continue ſavage and untractable, young ones are eaſily tamed, ſo as to play with the dogs, and follow their owners, like other domeſticated animals. They are remarkably attached to a warm fire; which they often approach ſo cloſely, that they burn themſelves in a very dreadful manner. They are ſubject to the mange; and have glands under their tails, which emit a ſtrong ſcent. The poor of ſome countries eat their fleſh; which, notwithſtanding it's being fat, is at beſt but rank and diſagreeable.

Theſe animals are generally hunted during the winter nights; and their hind quarters are ſometimes made into hams, which are ſaid to be tolerable food. Their ſkins, with the hair on them, are uſed for piſtol furniture; and their hair is made into bruſhes for ſoftening the ſhades in painting.

Badgers inhabit moſt parts of Europe, as far north as Norway and Ruſſia: they are alſo found in China; and are often expoſed to ſale in the butchers ſhops of Pekin, their fleſh being much admired by the Chineſe. Badgers abound in every part of Great Britain, but ſeem moſt numerous in the midland counties.

Badgers are either caught by means of ſprings or ſteel traps, or by digging pits acroſs their paths five feet deep, and four feet long, making them narrow at the top and bottom, and wide in the middle. Theſe pits are covered with ſmall ſticks and leaves, that the animals may not ſuſpect any danger, but inevitably fall into them whenever they tread on the ſurface. Sometimes they are hunted into their holes, and then dug out; but this method is very tedious, as they burrow extremely deep.

Naturaliſts have deſcribed three ſpecies of the Badger; the Common, the American, and the Indian.

Badger, Common. The Common Badger has ſmall eyes; ſhort ears; a ſhort thick neck; and very ſhort and thick legs. The noſe, chin, part of the cheeks, and the middle of the forehead, are white; the ears and eyes are encircled with a pyramidal bead of black; the hair on the body is long and rough, of a yellowiſh white at the roots, black in the middle, and cinereous at the points. The throat, breaſt, and belly, are black; and the tail, which is about ſix inches long, is covered with hair of the ſame colour with that on the body. The length of this animal is commonly two feet ſix inches, from the noſe to the inſertion of the tail; and it weighs from twenty to thirty pounds.

Naturaliſts formerly diſtinguiſhed the Common Badger by the name of the Swine Badger, and the Dog Badger; from the fancied reſemblance of their heads to thoſe animals; and ſo divided them into two ſpecies. But the moſt accurate obſervers of nature have only been able to diſcover one kind; namely, that which has a head like the canine race.

It appears that the Common Badger is confined to the cold or temperate parts of the globe, being never found in the warmer climates of India or Africa.

Badger, American. The American Badger is diſtinguiſhable by a white line paſſing from the tip of the noſe to the back of the neck, bounded with black as far as the hind part of the head; then by a white line; and, immediately between that and the ears, by another black one. The hair over the whole body is long, being aſh-coloured on the back and belly, and yellowiſh on the ſides. The thighs are darkiſh; and the tail is covered with long yellow hairs tipped with white, and terminating in a duſky colour.

This animal is a native of Terra del Labrador; and is very ſeldom ſeen in this country, either alive or in a ſtate of preſervation. Buffon deſcribes it from a ſtuffed ſkin; and ſucceeding naturaliſts have in general adopted his words.

Badger, Indian. The Indian Badger has ſcarcely any external ears; it's head is ſmall; it's noſe is pointed; each foot has five toes; and it's claws are very long and ſtraight. The noſe and face are black; and the crown, neck, back, and upper part of the tail, are white, inclining to grey: but the legs, belly, ſides, and the under part of the tail, are black. It's length, from the tip of the noſe to the inſertion of the tail, is about two feet; and the tail itſelf is about four inches long, and covered with ſhort and ſmooth hair.

This ſpecies, which is a native of India, is carnivorous, ſportive, and mild. It ſleeps with it's head between it's hind-legs, and is a very rare and curious animal.

BÆTUS. A name given by Ariſtotle, and ſome other ancient Greek writers, to the fifth called by the Latins cottus; ſuppoſed by modern naturaliſts to be the ſame with the bull-head, or miller's thumb.

BAGADAT. A term expreſſive of the columba tabellaria, or carrier-pigeon. This name

is probably a corruption of the word Bagdat, the city from which this bird is ſometimes imported into Europe, though originally brought hither from Baſſora.

BAGRE. A ſmall-bearded fiſh of the anguilliform kind, of which there are ſeveral ſpecies. It is deſtitute of ſcales, but it's whole body is covered with a ſoft mucous ſkin of a ſilvery whiteneſs; of which colour likewiſe are the beard, the head, and the fins. The eyes are large, the mouth is ſmall, and it has no teeth. It is caught in the American ſeas, and is eſteemed eatable.

This fiſh is a ſpecies of the ſilurus, in the Linnæan ſyſtem.

BAGRE DE RIO. A name ſometimes given to the fiſh generally known by that of nhamdia.

BAIT, WHITE. A ſmall fiſh caught in great plenty, during harveſt, in the River Thames near Blackwall, and eſteemed very delicious. The White Bait, which is certainly the fry of ſome particular fiſh, has been attributed to the ſhad, the ſprat, the ſmelt, and the bleak. Pennant, however, obſerves, that this fiſh belongs to the genus of cyprinus, becauſe it has only three branchioſtegious rays, and one dorſal fin. It's body is compreſſed, like that of the bleak, it's uſual length being two inches; the under-jaw is the largeſt; the irides are ſilvery, and the pupils black; the dorſal fin conſiſts of about fourteen rays; the ſide-line is ſtraight; and the tail, which has black tips, is forked.

BALANCE FISH. The Engliſh name for the zygæna of naturaliſts; a fiſh of the whale kind, to which it is almoſt equal. The Balance Fiſh differs in ſize from all others with reſpect to the monſtrous ſhape of it's head, which reſembles the large hammer of a blackſmith, at the extremities of which the eyes are placed; however, the forepart ſwells out into a ſemicircle, except that it terminates in an edge. The mouth, which is of an enormous ſize, is armed with three or four rows of exceedingly ſtrong, broad, and ſharp teeth, notched at the edges like a ſaw. The tongue is very broad; and the body is round and long, deſtitute of ſcales, and covered with a ſkin reſembling leather. The ſpines on the back are continued to the ſuperior part of the tail, where fins ariſe on each ſide. The tail is bifid; and, in many reſpects, this fiſh reſembles the ſhark, though it may be eaſily diſtinguiſhed from moſt others of it's kind by the extraordinary formation of it's head. It is a native of the Mediterranean Sea.

BALANI. A genus of ſhell-fiſh belonging to the claſs of multivalves, approaching nearly to the ſhape of an acorn, and uſually found adhering to the ſhells of the larger ſort of conchæ, but frequently diſtinguiſhed in England by the name of centre ſhells. The Balani and the conchæ anatiferæ are frequently confounded together, though in reality very different. The Balani are ſometimes found affixed to a variety of ſubmarine productions; ſuch as the harder ſea-plants, and all ſorts of cruſtaceous and teſtaceous animals, rocks, and timber. They may be ranged very properly under the two diſtinctions of wide and narrow-mouthed; and include ſeveral ſpecies. The ſmall fiſh which nature has incloſed in this ſhell is of a very ſingular and admirable ſtructure. Leewenhoek confeſſes that he never met with any other animal in which ſo many objects of wonder were diſcloſed to the naked eye. It has twelve legs, or arms, crooked, and garniſhed with a great number of hairs, which it elevates on all occaſions; and, beſides theſe, it is furniſhed with eight others, inferior in ſize, and lower in poſition. The body in every reſpect reſembles that of the concha anatifera. It is mucous, cartilaginous, and bad-taſted. The ſhell ſhapes itſelf, at the baſe, to the figure of the ſurface of whatever it adheres to, and from which it is, with difficulty removed. In the Linnæan ſyſtem this is a ſpecies of the lepas.

BALATITI. A name given by the natives of the Philippine Iſlands to a particular bird, by the flight of which they pretend to divine future events, like the ancient aruſpices.

BALBUSARDUS. A claſſical name for the bird called in Engliſh the bald buzzard. It is of the long-winged hawk kind; and has been deſcribed by Aldrovandus, and ſome other naturaliſts, under the name of the haliætus and morphnus, two ſpecies of the eagle. It frequents the banks of ponds and rivers, and ſometimes thoſe of the ſea, where it preys on fiſh. It builds it's neſt on the ground among reeds, where it lays three or four large white eggs, little inferior in ſize to thoſe of the galinaceous tribe.

BALD PATE. An oriental fiſh, ſo called from it's having no ſcales on the head and neck, though the reſt of the body is covered with them. It is of a greyiſh colour; the mouth is extremely wide, and ſpotted with red; and the eyes are large, yellow, and prominent. It is caught in rivers, as well as in the ſea; and the fleſh is eſteemed ſalubrious and agreeable.

BALEARIC CRANE. A name given by Pliny to a bird of the Crane kind, with a topping reſembling that of the green wood-pecker. This bird was unknown to the moderns till they became acquainted with the birds of the tropical climates; when one of the Crane kind with a topping, was brought into Europe, and deſcribed by Aldrovandus as Pliny's Balearic Crane. It is pretty nearly of the ſhape and ſize of the common Crane, with long legs, and a long neck, like others of the kind; but the bill is ſhorter, and the colour of the feathers is of a dark greeniſh grey. The head and throat, however, form the moſt ſtriking peculiarities in the conformation of this bird. On the head ſtands a thick, erect, round creſt, compoſed of briſtles, diverging every way, and reſembling rays, diffuſed in various directions, the longeſt of which are about three inches and a half; and they are all terminated by a kind of black taſſels, which give them a very rich and beautiful appearance. The ſides of the head and cheeks are bare, whitiſh, and edged with red; and beneath the throat hangs a kind of bag, like that of a cock, but undivided. The eye is large and prominent; the pupil, which is black and large, being ſurrounded with a gold-coloured iris.

The Balearic Crane is a native of the coaſt of Africa and the Cape De Verd Iſlands; and by expanding it's wings, it can run with great celerity, though it's uſual motion is but ſlow. When domeſticated, it walks deliberately and majeſtically among other poultry, and ſuffers itſelf to be approached without any ſeeming apprehenſion. It never rooſts in a houſe; but, when diſpoſed to reſt, it ſearches out ſome high wall, on which it perches, after the manner of a peacock; and, indeed, it ſo much reſembles that bird in it's ſeveral diſpoſitions, that ſome naturaliſts have deſcribed it under the name of the ſea-peacock, and even Ray ſeems inclined to refer it to that family. But though the

Balearic

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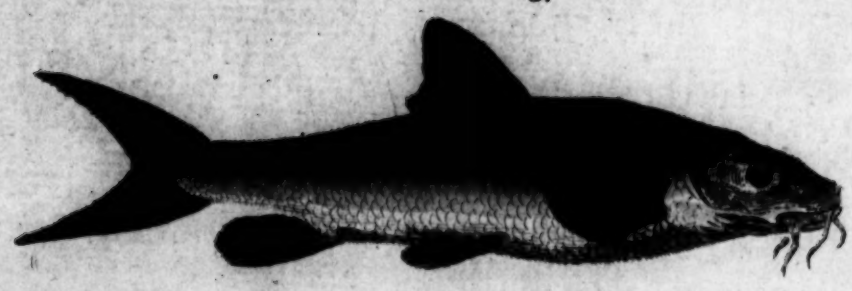

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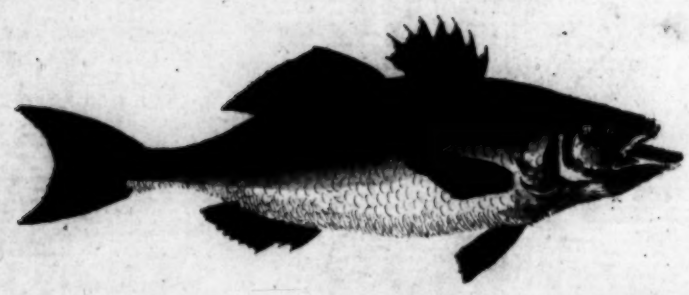

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1. BALANCE-FISH. 2. BALANUS. 3. BALEARIC CRANE. 4. BALLAN. 5. BARBEL.

6. BARBET, RED-CROWNED. 7. BARBET, YELLOW-CHEEKED. 8. BASSE.

Plate II. Published as the Act directs, by Harrison & Co. Dec.r 4. 1784.

MUSEUM

Balearic Crane agrees in ſome particulars with that beautiful race of birds, it alſo differs from it in ſo many eſſential qualities, that it cannot be referred to the ſame family without violating the laws of natural hiſtory. It appears pretty evident, however, that this bird was unknown to the ancients; and that, though it has obtained it's name from one deſcribed by Pliny, we ſhould more properly conſider the real Balearic Crane of that author as being the leſſer aſh-coloured heron, or perhaps the egret.

BALESTRA. A name given by Salvian, and ſome other authors, to the fiſh more generally known by the name of capriſcus.

BALISTES. A genus of the ſwimming amphibia, comprehending eight ſpecies.

BALIVIS. A name given by the natives of the Philippine Iſlands to the common duck of that climate; which is ſomewhat inferior in ſize to that of Great Britain, but much more beautifully variegated.

BALLAN. A ſpecies of the wraſſe caught on the northern coaſts of England, and differing in ſeveral particulars from the other ſpecies. It is formed like the common wraſſe, except between the dorſal fin and the tail, where there is a conſiderable depreſſion; above the noſe is a deep ſulcus; and, on the farther cover of the gills, there is a depreſſion, radiated from the centre. It has only four branchioſtegious rays; the dorſal fin has thirty-one; the pectoral fins have fourteen; the ventral has ſix; and the anal twelve. The tail is rounded at the extremity, and at the bottom, for a conſiderable ſpace; and between each ray there is a row of ſcales. The colour of this fiſh is yellow, variegated with orange; and it commonly weighs about five pounds.

BALLERUS. A name given by ſome authors to a ſpecies of freſh-water fiſh of the leather-mouthed kind; which appears to be the ſame with the circaſſius, or (as ſome call it) the circaſſii tertium genus.

BALLERUS is alſo a name given by Ariſtotle to that ſpecies of cyprinus, called blicea pleyſtra and pallerus by the moderns.

BALTIMORE BIRD. The Baltimore Bird, which is generally found in Virginia and Maryland, is about the ſize of a linnet; from the neck to the tail, as well as on the upper part of the wings, it is of a bright gold colour; and the head is black. It uſually fixes it's neſt to two twigs at the end of a bough of the tulip or poplar-tree.

BALTIMORE BIRD, BASTARD. The Baſtard Baltimore Bird has a pointed bill, with a black ſpot under it. The tail and wings are of a browniſh aſh colour; but all the other parts are yellow, except the feet, which are blue. The head and breaſt, together with half the back of the female, are of the ſame colour; and the tail is black. The lower half of the wings is alſo black; the upper half, the extremity of the back, the breaſt, the belly, and the thighs, are of a dirty red; and the feet are blue.

BANOY. A name given by the natives of the Philippine Iſlands to a ſpecies of hawk ſomewhat larger than our ſparrow-hawk, of a yellowiſh colour on the back and wings, and white under the belly. It is the moſt common ſpecies of hawk in that climate; and is extremely fierce and voracious.

BANSTICKLE. A name frequently given to the gaſterciſteus. It is likewiſe called the prickle-bag, or prickle-back; and ſometimes the ſtickle-back.

BARB. An appellation ſometimes given to the Barbary pigeon, the columba numidica of Moore. This bird, which is but ſmall, has a very ſhort beak, like that of the bull-finch; with a naked circle of tuberoſe red fleſh round the eyes; and the irides are of a pale colour. The value of the bird increaſes in proportion to the breadth and deepneſs of the colour of this circle; which, however, is always narrow when it is young, and does not arrive at it's full breadth till the fourth year of it's age. Some of this ſpecies have a tuft of feathers behind their heads, but others want that beautiful diſtinction. When the bird is affected with ſickneſs, the red circle round the eyes becomes pale and whitiſh. The proper colour of the Barbary pigeon is black, or dun; though there are likewiſe ſome pied ones: but theſe, being of a mixed breed, are eſteemed far leſs valuable.

BARBATUS PISCIS. A name given by Salvian to the ſilurus, called in Engliſh the ſheat-fiſh, the glanus of Pliny, and other ancient naturaliſts. Artedi deſcribes this fiſh under the name of the ſilurus with four cirri, or beards, at the mouth. This ſeems to diſtinguiſh it from the fiſh called the lake, or alkuſſa; which, though certainly a genuine ſpecies of the ſilurus, has only one beard.

BARBE, or BARB. A beautiful, vigorous, and fleet breed of horſes, brought from Barbary.

Barbs are generally ſlender made, their legs being far aſunder. It has been remarked that Barbs grow ripe, but never old, becauſe they retain their vigour to the laſt: and, for this reaſon they are greatly prized for ſtallions; their mettle, according to the Duke of Newcaſtle, ceaſing only with their lives.

We are told that the Barbs anciently ran wild in the deſarts of Arabia; and that ſome of them even exceed the oſtrich in ſwiftneſs. Dapper informs us, that the moſt beautiful Barbs are ſold ſometimes at one thouſand ducats apiece. They are fed with a very parſimonious hand; and their genealogies are preſerved with as much care, and traced with as much preciſion, as thoſe of the firſt families of Europe.

This valuable breed, however, is now much degenerated; the Arabians having been diſcouraged from keeping it up, through the violence and injuſtice of the Turkiſh officers, who ſeize them as ſoon as they are reared, without making a juſt compenſation to their owners. At preſent, the Tingitanians and Egyptians have the reputation of preſerving the beſt breed of Barbs, both with reſpect to ſize and beauty; the ſmalleſt of theſe laſt being uſually ſixteen hands high.

The principal qualities of the Barbs are, that they walk well; and ſtop ſhort, if required, even in a full career. They are, however, lazy and negligent in all their motions; they will often ſtumble in walking over the ſmoothеſt ground; they trot very rough, and gallop very low; but, on the other hand, they are generally ſinewy, nervous, and excellently winded, and therefore adapted for a long journey, if not over-weighted.

The mountain Barbs are accounted the beſt, becauſe they are the largeſt and ſtrongeſt: they belong to the Allarbes, a nation inhabiting the interior parts of Africa; for which reaſon they are not procured without difficulty.

Though Barbs are not unuſual among people of faſhion in this country, they fall infinitely ſhort of that ſwiftneſs for which they are celebrated in their native regions. This may be accounted for, partly from the ſmallneſs and lightneſs of the Arabs, their riders; and partly, from their not being loaded with heavy

heavy ſaddles and bridles, as in Europe, nor even with ſhoes. An Arabian's ſaddle is only a cloth girt round, with a pair of light ſtirrups, and a kind of pummel to ſupport them.

BARBEL. A kind of fiſh which uſually frequents the deep and ſtill parts of rivers, where it lives in ſocieties; and roots, like the hog, with it's noſe in the ſoft banks. It is ſo tame, that it frequently ſuffers itſelf to be taken with the hand; and numbers may be caught with great facility in diving. In ſummer it prowls about in ſearch of food; but, in winter, it confines itſelf to the bed of the river.

The Barbel is ſometimes found to weigh eighteen pounds, and to meaſure three feet in length. It is of a long rounded ſhape, and is furniſhed with ſmall ſcales. The head is ſmooth; and on each corner of the mouth there is a ſingle beard, another being ſituated on each ſide of the noſe. The dorſal fin is armed with a remarkably ſtrong ſpine, ſharply ſerrated, with which it frequently inflicts a painful and ſevere wound. The ſcales are of a pale gold-colour, edged with black; the pectoral fins are of a pale brown; the ventral and anal fins are tipped with yellow; the tail is ſlightly bifurcated, and of a deep purple; and the belly is white.

This is one of the coarſeſt of all freſh-water fiſh; and is therefore ſeldom eat but by the poorer ſort of people, who frequently boil it with bacon, in order to give it a reliſh. The roe is extremely noxious, affecting thoſe who incautiouſly or ignorantly eat it, with a nauſea, vomiting, and purging, attended with a tendency to tumifaction.

BARBET. A Ceyloneſe bird, to which the epithet of red-crowned is generally added, to diſtinguiſh it from the yellow-cheeked Barbet, an inhabitant likewiſe of the ſame country. The crown and throat are of a fine ſcarlet colour; the bill is duſky, and beſet with briſtles; there is a black line above each eye; and on the cheeks, and above the tip of each ſhoulder, there is a large whitiſh ſpot. The breaſt is yellow, but croſſed by one bar of black and another of red; the back and coverts of the wings are of a fine green; the belly is white; the tail is green, except the exterior feathers, which are brown; and the legs are of a pale red.

BARBET, YELLOW-CHEEKED. A Ceyloneſe bird, the head and neck of which are of a clouded light brown colour; the cheeks, round the edges, are naked and yellow. The bill is red, and beſet with briſtles; the back is of a pale green colour; the coverts of the wings are green, but beautifully marked with ſmall white ſpots in the centre of each feather; the primaries are green; and the interior edges are duſky. The tail and belly are green; and the legs are of a kind of olive colour.

BARBET. A name given by Reaumur, and other French naturaliſts, to a peculiar ſpecies of worms which feed on pucerons.

This worm is more particularly called Barbet blanc, or heriſſon blanc, from it's being covered with oblong white tufts of filaments, ſtanding in the manner of the quills of a hedge-hog or porcupine. This creature is of the ſize of a ſmall fly when ſtripped of it's wings; but the tufted covering ſo much increaſes it's apparent magnitude, that it ſeems as large as a horſe-fly. In this form the Barbet lives ſor about a fortnight, and then becomes a chryſalis; from which, after the ſpace of a month, proceeds a ſmall beetle, of the ſize of our cow-lady, in general of a duſky brown colour.

BARBONI. A name frequently given to the mullus barbatus, a fiſh generally caught in the Mediterranean, and eſteemed very delicious.

BARBUS. The claſſical name for the barbel, called by ſome writers mullus fluviatilis, a ſpecies of the cyprinus.

BARGE. A name ſometimes given to the godwit or ſtone-plover.

BARIS. An animal of the monkey kind, deſcribed by La Croix as native of Sierra Leona. It generally walks erect; and, when tamed, is capable of performing many domeſtic offices, ſuch as grinding Indian corn in a mortar, fetching water in a jar, and turning a ſpit. It ſeems, however, to be merely a ſpecies of the orang-outang, or man of the wood.

BARNACLE. A name frequently given to the conchæ anatiferæ, a kind of ſhell fiſh ſometimes found adhering to the bottoms and ſides of ſhips; and, at others, to the fins and tails of whales, in certain ſeas.

Various ſpecies of ſhell-fiſh are included under the name of Barnacles; though ſome naturaliſts reduce them to two, viz. the balanus, and pinna marina.

BARNACLE. The Barnacle likewiſe denotes a bird of the gooſe kind, common in the Hebrides; concerning the origin and ſpecies of which many fables have been invented. Ancient credulity has repreſented the Barnacles as the produce of a marine animal, or ſea-ſhell; but modern naturaliſts, on better evidence, refer it to the natural manner of generation of the feathered kind, making it a real gooſe, produced, like others, from an egg.

The Barnacle is likewiſe ſometimes called the ſoland gooſe, or anſer Scotticus. Some naturaliſts erroneouſly maintain that it is the ſame with the French macreuſe, or macrout; and others, that it is the ſame with the diable de mer. Dr. Robertſon, however, marks the difference; deſcribing the Barnacle as of the gooſe kind; the macreuſe, as of the duck kind; and the diable de mer, as of the moorhen kind. The ſame author endeavours to prove that the macreuſe is the ſame with the ſcoter, or anas niger minor, deſcribed by Ray and Willughby, in contradiction to the opinion of M. Cattier, who took it for the greater coot of Bellonius; and alſo of others, who miſtook it for the puffin of the Scillies and the Iſle of Man.

BARNFIARD. A bird generally ſeen hovering over the watery element, and regarded by mariners as a prognoſtic of unfavourable weather. It is about the ſize of a ſparrow; it's neck and back are black; it's breaſt and belly are grey; it's feet are red; and it's bill is black, and ſomewhat depreſſed. It ſwims very nimbly along the ſurface of the water, but the place where it breeds is unknown.

BARRACADA. A ſpecies of fiſh about fifteen inches long, and three broad. The lower-jaw is a quarter of an inch longer than the upper; the eyes are two inches diſtant from the extremity of the ſnout; the lower-jaw is furniſhed with very ſmall teeth; and the upper with a double row, of which the exterior are the ſhorteſt. The fore-part is narrow as far as the gills, to which members it gradually encreaſes; from thence it becomes almoſt of an equal thickneſs to the vent, where it begins to decreaſe to the beginning of the tail. The colour is duſky on the back, as far as the lateral line, which runs from the head through the middle of the ſides to the tail; the belly is white; and the whole is variegated with ſmall black ſpots, and

and covered with very ſmall ſcales. On the back there are two ſoft fins, each about an inch in length, and the ſame in breadth; there are alſo two more at the gills, two on the belly, and one behind the vent; and the tail is broad and furcated. This fiſh has no Engliſh name, nor is it certain where it is caught: it is, however, mentioned on the authority of Sir Hans Sloane.

BARRACOL. A Venetian term for a ſpecies of ray fiſh, called by Bellonius and Geſner, miraletus; and, by others, raia oculata lævis. Artedi calls it a ray with a ſmooth back and belly, having the eyes ſurrounded with a ſeries of ſpines, and a triple row on the tail.

BARSE. An Engliſh name for the common perch; and alſo the Saxon name now in uſe for the ſame fiſh.

BASILICUS. A name given by ſome of the ancient naturaliſts to the regulus criſtatus, or golden-crowned wren.

BASILICUS, or BASILISK. A ſerpent of the moſt malignant nature; it's breath, and even look, being eſteemed mortal. It is alſo ſaid to proceed from a cock's egg brooded on by a ſerpent. Theſe, and other ſtories, equally ridiculous, are related by Galen, Pliny, Dioſcorides, and Eraſiſtratus. Kirchmayer and Vander Weil, however, have detected the folly and impoſture of the ancient traditions concerning it.

We meet with the Baſiliſk in holy writ; but the Hebrew word Pethen, which is tranſlated Baſiliſk, ſignifies, according to the beſt interpreters and commentators, an Aſp. In the Linnæan ſyſtem the Baſiliſk is a ſpecies of the lacerta.

BASKET-FISH. A very ſingular fiſh ſometimes caught in the North American ſeas, though not very frequent in any part of the world. Mr. Hooke, whom the Royal Society complimented with aſſigning it a name, calls it piſcis echinoſtellaris viſciformis. It's body reſembles an egg-fiſh, or echinus marinus; and it's arms are like the ſtar-fiſh: the diviſion of the branches having more the appearance of miſletoe than any other natural production we are acquainted with.

This fiſh ſpreads itſelf, from a pentagonal mouth-piece or root, in the centre of which the mouth is placed into five main limbs or branches; and each of theſe, at it's firſt iſſuing out of the body, is divided into two, making ten in all. Each of theſe ten again divides itſelf into two, making twenty in all; and ſo on, till a fourteenth diviſion is obtained, when they form upwards of eighty thouſand limbs. After this ſtage they become too minute to be traced farther by the eye; but it is very probable that even theſe are ſucceſſively ſubdivided.

The ramifications between the joints of the Baſket-Fiſh are not all of them of an equal length; though, for the moſt part, they are pretty nearly ſo. The arms, or branches, which in their natural ſtate are by no means very ſtrong, on being dried, become ſo extremely brittle, that the ſmalleſt force is capable of deſtroying them.

This curious creature is ſometimes found on the ſhoals of Nantucket, an iſland on the coaſt of New England; but, what is very remarkable, it is never ſeen there unleſs when caught by a bait-hook, laid for ſome other fiſh: this it claſps faſt, and encircles with all it's arms, when it aſcends to the ſurface of the water, in the ſhape of a wicker-baſket, from which circumſtance it receives it's name; but when it has been ſome time out of it's native element, it becomes quite flat.

The numerous arms with which this fiſh is furniſhed are evidently intended to aſſiſt it in catching it's prey; and it probably extends them to their full length while under the water, and enfolds in them every thing fit for food that happens to ſwim over, ſmall mackrel having ſometimes been found incloſed in the arms of the Baſket-Fiſh.

It is evident that this fiſh is of the ſtella arboreſcens, or branched ſtar-fiſh kind; but whether the ſame with that commonly known under the appellation of caput Meduſæ, is uncertain.

The body of this fiſh, from what is related of it's protuberance, and it's reſemblance to the echini marini, may probably form the aſteropodium in it's foſſil ſtate.

BASSANUS. A ſpecies of the pelican.

BASSE. The Engliſh name of the ſea-wolf, the lupus piſcis of naturaliſts, ſo called from it's voracious appetites. It weighs about fifteen pounds, and reſembles a trout in it's ſhape, except that it's head is proportionably larger. The irides are ſilvery; the mouth is large; the teeth are ſituated in the jaws, and are very ſmall; and the ſcales, which are of a middling ſize, are remarkably thick ſet, and adhere cloſely to one another. The firſt dorſal fin has nine ſtrong ſpiny rays, of which the foremoſt is the ſhorteſt, and the middlemoſt the higheſt; and the ſecond dorſal fin conſiſts of thirteen rays, the firſt ſpiny, and the others ſoft. The pectoral fins are furniſhed with fifteen ſoft rays; the ventral with ſix rays, the firſt ſpiny; and the anal fin has fourteen rays, the three firſt ſpiny, and the others ſoft. The back is of a duſky colour tinged with blue; the belly is white; and the tail is ſlightly forked. When young, the back is variegated with ſmall black ſpots, which diſappear as it advances in age.

The Baſſe is extremely well taſted, and very wholeſome. It is found in the ſeas ſurrounding the Britiſh iſles, but is ſeldom known to enter the mouths of rivers, though evidently a ſpecies of the perch.

BAT. A genus of animals which ſeem to fill up the chaſm between quadrupeds and birds. Indeed, ſome naturaliſts have found animals of this kind ſo much partaking of the nature of both, that, in deſcribing a Bat, they have been at a loſs in which rank to place it; and have ſeemed to doubt, whether they were deſcribing a bird or a beaſt. Theſe uncertainties, however, no longer exiſt; for Bats are now univerſally ranked with quadrupeds, to which their viviparous nature, their hair, their teeth, and ſeveral other habitudes, evidently entitle them. Pliny, Geſner, and Aldrovandus, who placed them among birds, did not conſider that they were deſtitute of every character of that order of animals, except the power of flying. Indeed, when this animal is ſeen at the duſk of the evening, ſupporting itſelf in the air with an aukward and ſeemingly conſtrained motion, it has, in ſome meaſure, the appearance of a bird; but naturaliſts, who have examined it with due attention, watched it's habits, and inſpected it's conformation, are of a very different opinion.

The Bat ſcarcely reſembles a bird in any one particular, except in that of ſupporting itſelf in the air. Like the quadrupeds, it brings forth it's young alive, and ſuckles them; it's lungs are formed like theirs; and it's inteſtines and ſkeleton bear a compleat reſemblance to thoſe of quadrupeds. In many reſpects it even approximates the human race; ſo much, indeed, as to have led ſome votaries

of ſyſtematical arrangement to place it in the very higheſt claſs of animated nature.

Bat, Common. The Common Bat is about the ſize of a mouſe, or nearly two inches and a half long. The members, uſually called wings, are merely the four interior toes of the fore-feet extended to an enormous length, and connected by a thin membrane, reaching alſo to the hind legs, and from them to the tail. The firſt toe is entirely looſe and flexile, ſerving as a heel when the Bat walks, or as a hook when it is deſirous of adhering to any thing; and the hind-feet are diſengaged from the ſurrounding ſkin, and divided into five toes, furniſhed with ſharp claws. The body is covered with ſhort fur, of a mouſe-colour tinged with red; and the membranes are of a deep duſky hue. The eyes are ſmall, and the ears exactly reſemble thoſe of the mouſe.

This ſpecies of Bat is very common in England, and makes it's appearance early in ſummer evenings. It principally frequents the ſides of woods, glades, and ſhady walks; but is frequently obſerved to ſkim along the ſurfaces of rivers and canals. It generally preys on gnats, moths, and nocturnal inſects of every kind. It's flight conſiſts in a laborious, irregular motion: and, if it happens to ſtrike againſt any object, and fall to the ground, it is uſually caught with facility. It makes it's appearance only during the moſt pleaſant evenings; when it's prey is abroad in great plenty, which it purſues with open mouth. At other times, it continues in it's retreat, which is commonly the chink of a ruined building, or the trunk of a tree. This little animal, even in ſummer, ſleeps away the greateſt part of it's time, never venturing abroad by day-light, nor in rainy weather; nor ever hunting for it's prey except during a very ſmall part of the night. But it's ſhort ſpan of actual exiſtence is ſtill more abridged by it's continuing in a torpid ſtate during the whole winter ſeaſon. On the firſt approach of cold weather, the Bat prepares for it's ſtate of lifeleſs inactivity; and ſeems rather to ſelect a place where it may remain ſafe from interruption, than where it may be warmly or conveniently lodged. For this reaſon, it is uſually ſeen hanging by it's hooked claws to the roof of a cave, regardleſs of the dreadful ſurrounding damps. The Bat, indeed, ſeems to be the only animal that will venture to remain in theſe horrid ſubterranean abodes, unaffected by any poſſible change of weather. Such of this tribe as are not provident enough to procure themſelves a deep retreat, where the cold and the heat can be but little affected by the external air, are ſometimes expoſed to great inconveniences: for the weather often becomes ſo mild, even in the middle of winter, as to warm them prematurely into life, and to allure them from their holes in queſt of food, when nature has not provided them with a ſupply. Theſe, therefore, having ſeldom ſtrength to return, after exhauſting themſelves in a vain purſuit after inſects which are nowhere to be found, become themſelves the prey of owls, or other voracious animals.

The Bat copulates and brings forth it's young in ſummer, generally from two to five at a time. The female, however, has but two nipples, which are placed forward on the breaſt, as in the human kind. From this peculiarity, Linnæus gave the Bat the title of a primas, and raiſed this contemptible animal to the ſame order with the human ſpecies.

This aſſiduous enquirer into the ſecrets of nature, gives us to underſtand, that the female Bat, unlike moſt birds and quadrupeds, builds no neſt for her young, but ſeems fully ſatisfied with the firſt hole ſhe meets with; where, ſticking herſelf by her hooks againſt the ſides of her apartment, ſhe permits her young to hang at her nipple for the firſt or ſecond day; and when ſhe begins to grow hungry, and is neceſſitated to go abroad in queſt of food, ſhe ſticks her little ones againſt the wall, in the ſame manner; to which they immoveably cling, and patiently expect her return.

Thus far the Bat ſeems cloſely allied to the quadruped race; it's ſimilitude to the bird being infinitely leſs ſtriking. As nature has furniſhed birds with extremely ſtrong pectoral muſcles, to aſſiſt them in moving their wings, and to direct their flight; ſo has ſhe alſo furniſhed the Bat. As birds, likewiſe, have very weak legs, and unfit for the purpoſes of motion, the legs of the Bat are faſhioned in the ſame manner, and the creature is never ſeen to walk but in caſes of extreme neceſſity. The toes of it's fore-legs extend the web-like membrane which lies between them; and this, being extremely thin, ſerves to lift it's little body into the air. In this manner, by an unceaſing percuſſion, much ſwifter than that of birds, the creature continues to direct it's flight: however, the great labour required in flying ſoon fatigues it; for, extremely unlike ſome birds, which are capable of continuing for days together on the wing, the Bat becomes languid in leſs than an hour, and returns to the enjoyment of it's retreat.

If we conſider the Bat as it is uſually ſeen in our own country, we ſhall find it an harmleſs, inoffenſive creature; the general tenor of it's induſtry being employed in purſuing inſects which are much more noxious to us than itſelf can poſſibly be; while it's evening flight amuſes the imagination, and adds one figure more to the pleaſing groupe of animated nature.

In the Eaſt and Weſt Indies, Bats are truly formidable; each of them ſingly is a dangerous enemy; but, when united in flocks, they become dreadful. Des Marchais informs us, that Bats are ſo numerous on the coaſts of Africa, that if the natives were to eat them, as is the caſe in the Eaſt Indies, they could never want a ſupply of food. In theſe regions, a flight of them is ſufficient to obſcure the ſetting ſun; and, in the morning, they are ſeen ſticking on the tops of trees, and clinging to each other, like bees when they ſwarm. The Europeans frequently amuſe themſelves with ſhooting among this huge maſs of living creatures, and obſerving their embarraſſment when wounded. Theſe Bats ſometimes enter the houſes of the negroes, and deſtroy whatever proviſions come within their reach.

Bat, Great Madagascar. This very formidable creature, the rouſette of Buffon, is nearly four feet broad when it's wings are extended, and one foot long. It reſembles the Engliſh Bat in the form of it's wings, in it's manner of flying, and in it's internal conformation; but is eſſentially different from it in ſeveral particulars. It has large canine teeth; with four cutting ones above, and as many below. The noſe is black and ſharp; the ears are large, and naked; and the tongue is pointed, and terminated by ſharp aculeated papillæ. The exterior toe is detached from the membrane, the claw being ſtrong, and hooked; the hind-feet have five toes, the talons of which are very ſtrong, crooked, and compreſſed ſideways; and the animal has no tail. The head is of a dark ferruginous colour; the neck, ſhoulders, and under-ſide, appear of a lighter

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1. GREAT-MADAGASCAR BAT. 2. HORSE-SHOE BAT. 3. LONG-EARED BAT. 4. NEW-YORK BAT.

5. SEA BAT 6. SPECTRE BAT.

Plate XII. Published as the Act directs by Harrison & Co Dec.r 1st 1824.

a lighter and brighter red; the hair on the back is duſky and ſmooth; and the membranes of the wings are likewiſe duſky. The colour, however, varies conſiderably; ſome being entirely of a reddiſh brown, and others duſky.

Theſe formidable animals are found in Guinea, Madagaſcar, and in all the iſlands from thence to the moſt remote ones in the Indian Ocean. They likewiſe (as appears from the voyages of the late Captain Cook) abound in New Holland, the Friendly Iſles, the New Hebrides, and New Caledonia. When they repoſe, they ſtick themſelves to the tops of the talleſt trees, from whence they hang with their heads downwards; but, when in motion, they have a very terrific appearance. They are ſeen in theſe iſlands in immenſe multitudes; darkening the air, as well by day as by night; deſtroying the ripe fruits of the country; and ſometimes ſettling on animals, and even man himſelf: they indiſcriminately devour fruits, fleſh, and inſects; and drink the juice of the palm-tree. They are heard at night in the foreſts, at the diſtance of more than two miles, making a horrible noiſe; but no ſooner does day begin to approach, than they haſten to retreat. Hardly any thing is ſecure from the depredations of theſe noxious animals: they deſtroy fowls, and various domeſtic animals, unleſs preſerved with the utmoſt care; and frequently faſten on the very faces of the inhabitants, where they inflict dangerous wounds. Indeed, it is very probable, as Buffon remarks, that the ancients have taken their ideas of harpies from theſe fierce and voracious creatures; as they both ſeem to concur in many parts of their deſcription, being equally deformed, greedy, uncleanly, and cruel.

The Indians eſteem the fleſh of theſe animals peculiarly excellent, eſpecially at certain ſeaſons of the year, when they are very fat. The French, who inhabit the Iſle of Bourbon, boil them in their bouillon, in order to give it a reliſh; while the negroes hold them in the greateſt abhorrence. Many of them are of much larger dimenſions than thoſe already deſcribed. Beckman meaſured one that was five feet four inches from one tip of the wing to the other: and Dampier informs us, that he ſaw one which ſpread farther than he could reach with his arms extended. Their bodies are generally from the ſize of a pullet to that of a dove; their ſcream is dreadful, and their ſmell rank: they reſiſt fiercely when attacked, and their bite is terrible.

Linnæus gives this ſpecies the title of Vampyre, ſuppoſing it to be the ſame with that which draws blood from perſons when aſleep: but Buffon is of a contrary opinion, aſcribing that faculty to a ſpecies found only in the new world. Pennant, however, differs from both theſe naturaliſts: and very juſtly obſerves, that there is reaſon to imagine that this thirſt after blood is not confined to the Bats of one continent, nor of one ſpecies; for Bontius and Nieuhoff inform us, that the Bats of Java generally attack thoſe perſons who lie with their feet uncovered, whenever they can procure acceſs into their apartments: and Gumilla, after deſcribing a greater and a leſſer ſpecies found on the banks of the Oronoque, declares them to be equally greedy after human blood.

Perſons who have been thus attacked by this dreadful phlebotomiſt, have ſometimes paſſed imperceptibly from a ſound ſleep into eternity. The Bat is ſo dextrous as to inſinuate it's ſharp-pointed tongue unperceived into a vein, and to ſuck the blood till it is ſatiated; at the ſame time fanning with it's wings, and agitating the air, which in hot climates lulls the ſufferer into a more profound ſleep. It is therefore dangerous to repoſe in the open air, or to leave any entrance unſecured by which thoſe noxious animals can be admitted. They do not, however, always confine themſelves to human blood; for M. De Condamine, in his Voyage to South America, informs us, that in certain parts of that continent the Bats have deſtroyed all the cattle which were introduced there by the miſſionaries for the purpoſe of forming a ſettlement.

Bat, Vampyre, or Spectre. This animal, though leſs formidable in it's appearance, is more miſchievous than the former. It is furniſhed with a kind of horn at the extremity of the noſe; and it's ears are extremely broad, long, and erect. The hair on the body is aſh-coloured and pretty long; the wings are full of ramified fibres; the membrane extends from one hind-leg to the other; and the animal being without any tail, three tendons proceed from the rump, which terminate at the edge of the membrane. It is a native of South America; where it lives in the palm-trees, and grows very fat. Ulloa informs us, that the Bats of this ſpecies, towards the cloſe of day, leave their retreats, and viſit the cities and towns, covering the ſtreets like a canopy: and that they are the common peſt of men and animals; effectually deſtroying the one, and conſiderably diſtreſſing the other.

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Bat, Javelin. This ſpecies, which is of the ſize of the common Bat, is diſtinguiſhed by it's large pointed ears; and particularly by an erect membrane at the extremity of it's noſe, in the form of an ancient javelin, having two upright proceſſes on each ſide. It has no tail; it's fur is cinereous; and it inhabits the warmer parts of America.

Bat, Leaf. This animal, the feuille of Buffon, has ſmall round ears; and a membrane on the noſe, in the form of an oval leaf. It is furniſhed with a web between the hind-legs, but has no tail. The fur is of a mouſe-colour tinged with red; and it's ſize is equal to that of the common Bat. It inhabits Jamaica, Surinam, and Senegal. In the former iſland it lives principally in caves in the woods, and it is ſaid to feed on the prickly pear.

Bat, Cordated. The colour of the face of this animal is a light red, and that of the body ſtill more pale. It's ears are very broad and long; and from the extremity of it's noſe runs a large membrane in the ſhape of a heart. It has a web between it's hind legs, but no tail. This ſpecies inhabits Ceylon and the Molucca Iſlands.

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Bat, Peruvian. The body of this Bat is nearly equal in ſize to that of a pretty large rat; and the extent of it's wings is two feet five inches. It has a head like a pug-dog; large, ſtraight-pointed ears; and two canine, with two ſmall cutting teeth, in each jaw. The tail is incloſed in the membrane which joins to each hind leg; being alſo ſupported by two long cartilaginous ligaments involved in the membrane. This animal is of an iron-grey colour.

There is another Bat with a large head and hanging lips like thoſe of a maſtiff. It is leſs than the former, but agrees with it in every other reſpect. It inhabits Peru, and is frequently met with on the Moſquito ſhore.

Linnæus, on account of the number of it's teeth, places this ſpecies among the glires, next to the ſquirrels, under the name of noctilio Americanus; but ſuch is the variety in the numbers and diſpoſitions of the teeth in animals of this genus, that a profeſſed ſyſtematiſt might almoſt form as many genera as there are ſpecies. However, Bats have ſuch diſtinct external characters, that it is totally unneceſſary to have recourſe to the more latent marks in order to aſcertain their definitions.

Bat, Bull-Dog. The length of the body of this animal is little more than two inches; and the extent of the wings nine inches and a half. It has broad round ears, the edges touching each other in front; the noſe is thick; the lips are pendulous; and the upper part of the body is of a deep aſh-colour, the lower part being pale. The tail is long in proportion to the magnitude of the animal, and the five laſt joints of it are diſengaged from the ſkin or membrane.

Bat, Senegal. This animal meaſures about four inches from the noſe to the rump; and the extent of the wings is nearly twenty-one inches. It has a pointed noſe; a long head; and ſhort and pointed ears. The head and body are of a tawny brown, mixed with aſh-colour; but the belly is ſomewhat paler: and the two laſt joints of the tail extend beyond the membrane. It is a native of Senegal, from which it receives it's name.

Bat, Pouch. This creature is only an inch and a half long; the noſe is ſomewhat elevated; the chin is divided by a furrow; the ears are long, and rounded at the extremities; and on each wing, near the ſecond joint, there is a ſmall pouch or purſe. The tail is partly involved in the membrane, and partly projects. The body is of an aſh-coloured brown; and the belly is ſomewhat paler. This ſpecies inhabits Surinam.

Bat, Bearded. This ſpecies, which is ſmall, is diſtinguiſhed from all others of the Bat tribe by having hair on it's forehead, and very long hair under it's chin. The noſtrils are open a conſiderable way up the noſe; the ears are long and narrow; the upper part of the head and body are of a reddiſh brown; the lower parts are of a dirty white, tinged with yellow; and the tail is included in a membrane extremely full of nerves. This creature is a native of North America.

Bat, New York. The length of this animal, from the noſe to the tail, is ten inches and a half; the tail is one inch and three quarters; and the extent of the wings is ten inches and a half. The head is ſhaped like that of a mouſe; the ears are ſhort, broad, and rounded; it has two canine teeth in each jaw, but no cutting teeth; and it's tail is incloſed in a membrane of a conical ſhape. The head, the body, and the whole upper ſide of the membrane incloſing the tail, are covered with long and very ſoft hair of a bright tawny colour, but lighteſt on the head and on the beginning of the back; the belly is more pale; at the baſe of each wing there is a white ſpot; the wings are thin, naked, and duſky; and the bones of the hind-legs are very ſlender. This ſpecies inhabits New Zealand, and ſeveral of the North American provinces.

Bat, Striped. This animal is an inhabitant of the Iſland of Ceylon, where it is called kinwoula. It has a ſmall ſhort noſe; the ears are broad, ſhort, and pointing forwards; and the upper part of the body is of a clear reddiſh brown, the lower part being whitiſh. The wings are ſtriped with black, and ſometimes with tawny and brown. The length of this animal, from the noſe to the inſertion of the tail, is about two inches.

To this ſpecies of Bat may be referred another minute kind ſeen in great numbers in the New Hebrides: but which eluded every attempt of our late voyagers to obtain a ſpecimen.

Bat, Molucca. This animal, from the noſe to the rump, meaſures about three inches and three quarters; and the extent of the wings is about fifteen inches. It has a large head; a thick noſe; ſmall ears; and tubular noſtrils. The upper lip is divided; the tongue is covered with a number of papillæ and minute ſpines; the claw is united with the wing by a membrane; the firſt ray of the wing is terminated by a claw; and the extremity of the tail reaches beyond the membrane. The head and back are of a darkiſh aſh-colour; and the belly is a dull white. This ſpecies ſeems peculiar to the Molucca Iſles.

Bat, Horse-Shoe. There is a greater and a leſſer variety of this animal: the greater is about three inches and a half long from the noſe to the tip of the tail, and the extent of it's wings is about fourteen inches. It has a membrane at the end of the noſe, ſhaped like a horſe-ſhoe. The ears are large, inclining backwards, broad at the baſe, and ſharp-pointed; but it is deſtitute of the little or internal ear. The upper part of the body is of a deep aſh-colour; the lower part is whitiſh; and the tail is incloſed in the membrane. It inhabits the province of Burgundy, in France; and has lately been diſcovered in ſome parts of Kent.

Bat, Noctule. The length of this Bat is almoſt three inches; the tail is nearly two; and the extent of the wings is thirteen. The ears are ſmall and rounded; and the chin is marked with a minute verruca. The hair of this animal is of a reddiſh aſh-colour. It inhabits Great Britain and France; and never ſkims near the ground, but flies high in purſuit of it's prey.

Bat, Serotine. This Bat is about two inches and a half long from the noſe to the rump. It's noſe is oblongated; it's ears are ſhort, but broad at the baſe; and the hair on the upper part of it's body is brown mixed with ferruginous, that on the belly being ſomewhat paler. It is a native of France; but is likewiſe found in the caverns of rocks in ſome of the moſt remote parts of Ruſſia.

Bat, Pipistrelle. This ſeems to be the leaſt of all the Bat tribe; being no more than an inch and a quarter long; and the extent of the wings about ſix inches and a half. The noſe is ſmall; the upper lip is ſlightly prominent; the ears are broad; the forehead is covered with long hair; the colour of the upper part of the body is a yellowiſh brown, the lower being duſky; and the lips are yellow. It is found

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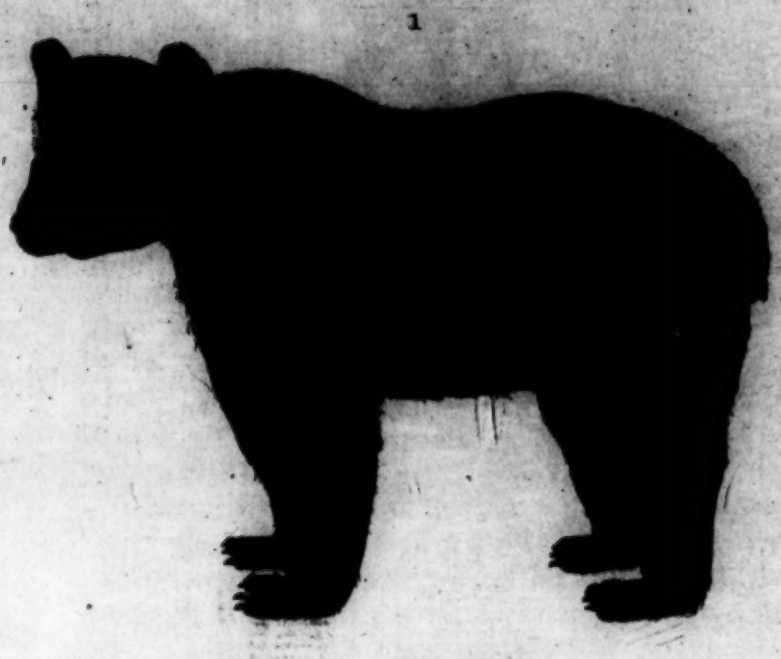

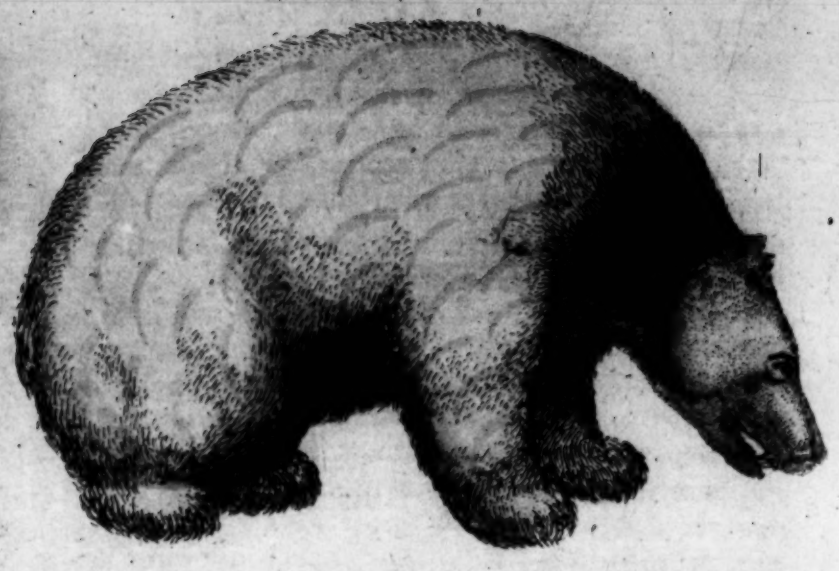

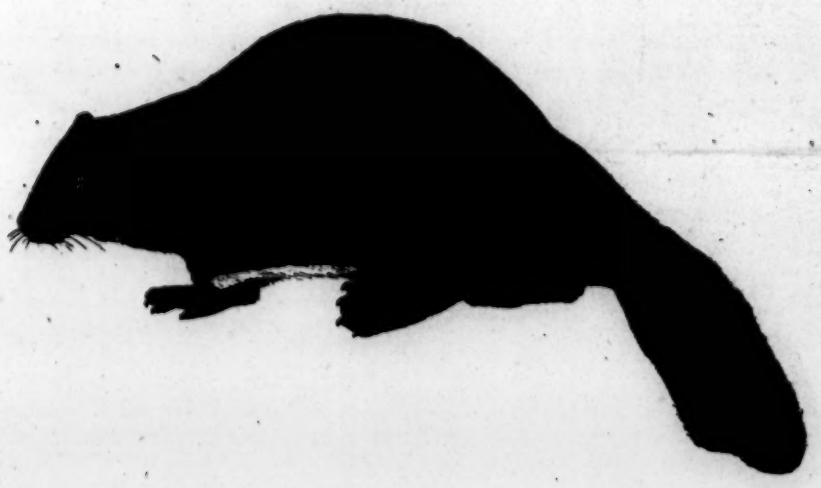

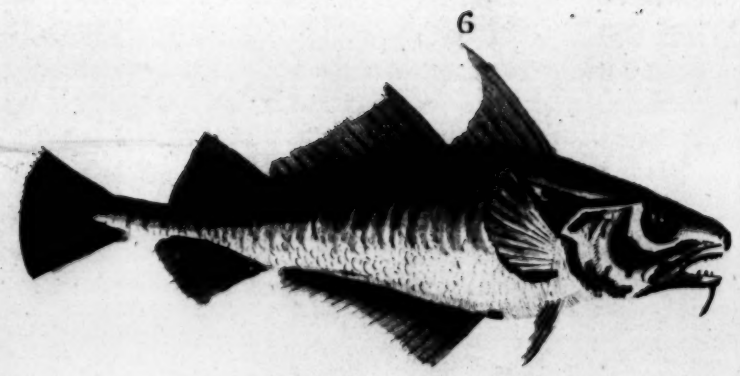

1. BROWN BEAR. 2. WHITE BEAR. 3. BEAVER.

4. INDIAN BEE-EATER. 5. BEES. 6. BIB.

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found in France, and in the rocky and mountainous parts of Ruſſia and Siberia.

Bat, Barbastelle. This animal is about two inches long, and the extent of it's wings is ten inches and a half. The forehead is depreſſed; the ears are long and broad; the noſe is ſhort, and flatted at the end; and the cheeks are full. The upper part of the body is of a duſky brown colour, and the lower is aſh-coloured and brown. It is a native of France.

Bat, Long-Eared. The body and tail of this animal are only one inch and three quarters long; the ears, which are upwards of an inch long, are thin, and almoſt pellucid; and, like all other Bats, except the horſe-ſhoe and the ternate, it is furniſhed with an internal or leſſer ear, ſerving as a valve to cloſe the greater when the animal is aſleep. It is a general inhabitant of Europe, and of Great Britain in particular.

Bat, Sea. This curious fiſh is about eight inches long, and nearly of the ſame breadth: two large ſpines proceed from the under-jaw; there are two large fins reſembling wings on the back and belly; and the tail-fin is like that of a dorado. The Sea-Bat is wholly of a dark brown or duſky colour. The ſkin on the back, and all round it's ſides, is rough like ſhagreen, intermixed with ſome larger pointed riſings; but that of the belly is ſmoother and ſofter.

There is another ſpecies of Sea-Bat which has a head like that of a toad; the fins very much reſemble the wings of the land-animal of this name; and the tail is long, and ſomewhat like that of a ſharp-ſnouted ray.

They are both natives of the Brazils and the Weſt-Indian ſeas.

BATACHOSALIS. A name given by many of the ancient Greek authors to the lophius, or rana piſcatrix, of the modern naturaliſts.

BATIS. See Batos and Raia.

BATOS. The name given by Ariſtotle and the ancient naturaliſts to the ſkaite, or flaire. They have generally called the male, Batos; and the female, batis. It is a ſpecies of the raia; and is diſtinguiſhed by Artedi under the name of the variegated ray, with the middle of the back ſmooth, and with one row of ſpines on the tail. Albertus gives it the title of the rayte and rubus.

BATRACHUS. A ſpecies of the ſilurus, a genus of fiſhes.

BAVOSA. An Italian name for a ſpecies of the ray-fiſh, called by modern authors levi-rayia, and raia oxyrynchus; and, by the earlier writers, raia bos, bos marinus, and leioraia. It is deſcribed by Artedi under the name of the variegated ray with ten prickly tubercles on the middle of the back.

BEAGLE. A ſort of hound, or hunting-dog. Beagles are of ſeveral kinds; as the ſouthern Beagle, ſomewhat leſs and ſhorter, but thicker than the deep-mouthed hound; the fleet northern or cat Beagle, ſmall, and a more fleet runner than the ſouthern: and from theſe two, by croſſing the ſtrains, is bred a third ſort, eſteemed preferable to either. To theſe may be added a ſtill ſmaller ſpecies, ſcarcely bigger than the lap-dog, which afford excellent diverſion in rabbit-hunting; but are otherwiſe unſerviceable, on account of their ſize.

BEAN-FLY. A very beautiful inſect of a pale purple colour, frequently found on bean-flowers, and produced from the worm or maggot called mida by naturaliſts.

BEAR. A well known quadruped of the cat kind; which, in the Linnæan ſyſtem, makes a diſtinct genus of feræ, or wild-beaſts. The diſtinguiſhing characters of the Bear are, that it has ſix fore-teeth, both above and below, the upper ones being alternately hollow within; the cutting teeth are ſingle, and conical; the grinders are five or ſix in number; the tongue is ſmooth; and the noſe is prominent. There are ſeveral different ſpecies of Bears; ſuch as the black Bear of North America, the ſmalleſt of the genus; the brown Bear of the Alps; the great Greenland, or white Bear; and the Kamtſchatka Bear: but all of them, though different in ſize and form, are unqueſtionably of the ſame original, and owe their principal variations to food and climate.

Bear, American Black. This animal has a long head; ſmall eyes, and ſhort ears rounded at the top. It's noſe is long and pointed, and of a yellowiſh brown colour; it's limbs are ſtrong, thick, and clumſy; and it has a ſhort tail, with large feet. The hair on the body and limbs is black, ſmooth, and gloſſy: and it is ſaid to be mild and ſhy in it's diſpoſition, ſubſiſting only on vegetables, particularly maize and potatoes, of which it is remarkably fond. Du Pratz ſays that the Bear will even reject animal food, though preſſed by hunger: but Dr. Goldſmith affirms the contrary; declaring that he has often obſerved the young ones, when brought over to England, prefer fleſh to every kind of vegetable aliment.

Theſe animals ſtrike with their fore-feet like a cat; and very ſeldom make uſe of their tuſks, but ſeize their aſſailants with their paws, and preſs them againſt their breaſts ſo as almoſt inſtantly to ſqueeze them to death. The females, after conception, retire into ſome ſecret place, leſt the males ſhould deſtroy their cubs when they are littered: and ſo impenetrable are their retreats, that, though ſeveral hundreds of Bears are killed annually in America during the winter, hardly a ſingle female is ever found among them. They bring forth two, and ſometimes three at a time; and though their cubs are certainly very deformed, they are not ſo ſhapeleſs as has been ſometimes pretended. The fleſh of Bears, in autumn, when they are become exceedingly large by feeding on acorns and other arboreſcent food, is extremely delicate; and the fat, which preſerves a certain degree of fluidity, is remarkably white and ſweet. After fattening itſelf to a very great degree, the Bear retires to it's den, where it continues forty or fifty days in a ſtate of total inactivity and abſtinence from food: but, at the end of that period, being forced from it's retreat by hunger, it comes forth in queſt of freſh nouriſhment evidently much emaciated. It is a mere vulgar error to ſuppoſe that, during this time, the Bear ſubſiſts by ſucking it's paws; ſince it rather lives on the exuberance of it's former fleſh, and only feels the calls of appetite when the fat it had acquired in ſummer becomes almoſt exhauſted. The Bear retreats either to the cliffs of rocks, the deepeſt receſſes of the moſt impervious woods, or to the hollows of decayed trees, which it aſcends and deſcends with ſurprizing agility. Multitudes are killed annually for their fleſh and ſkins, both of which are valuable; and the latter, in particular, forms a conſiderable article of commerce.

Bear, Brown. This creature, except in ſize and colour, almoſt entirely reſembles the former. It is not only ſavage, but ſolitary. It deſtroys cattle, and feeds on carrion; however, it's general food is roots, fruits, and vegetables. It plucks up

great quantities of peas; and, tearing them out of the ſhells on ſome ſtone or hard ſpot of ground, eats the peas, and carries off the ſtraw. In winter, when vegetable food begins to grow ſcarce, it often breaks into farmers yards, and makes terrible havock among their oats.

The voice of the Brown Bear (and, indeed, of every other ſpecies) is a kind of growl; and though, when tamed, it appears gentle and placid to it's owner, it ſhould nevertheleſs be cautiouſly managed, being often capricious, treacherous, and vindictive. Though apparently ſtupid and aukward in the extreme, it is not altogether indocile. There are few perſons, perhaps, who have not ſeen it dance on it's hind legs; though it's air and motion are proverbially ungraceful.

After the Bear arrives at maturity, it becomes incapable of being tamed; but, notwithſtanding it's ferocity, the natives of thoſe countries which it inhabits hunt it with great alacrity. The moſt general and leaſt dangerous method of catching Bears, is by throwing brandy on honey, which they eat with avidity, and thus become intoxicated. In Canada, where Bears are numerous, as they commonly take up their lodging in trees rendered hollow towards the top by age, they are taken by ſetting fire to theſe retreats, which are frequently from twenty to thirty feet from the ground. The old Bear generally ventures firſt out of it's den, and is ſhot by the hunters; and the young ones, as they deſcend, are caught in ſnares.

Bear, White. This ſpecies has a long head and neck; ſhort round ears; large teeth; and limbs of vaſt ſize and ſtrength. The hair is long, ſoft, and white; being tinged in ſome parts with yellow. The length of the White Bear is frequently thirteen feet; and it ſeems to be almoſt the only animal which, by being placed in the arctic regions, grows larger than thoſe of temperate climes. All other ſpecies of animated nature, as they approach the poles, ſeem to diminiſh in ſize, through the rigours of the ſurrounding atmoſphere; but the Bear, unmoleſted in theſe deſolate climes, and meeting with no opponent more powerful than itſelf, grows to an enormous ſize: and, as the lion is the tyrant of the African foreſts, ſo the Bear ſways his rude ſceptre over the icy mountains of Greenland and Spitzbergen.

When our mariners land on the unfrequented parts of thoſe gelid coaſts, the White Bears come down to view them: they approach ſlowly, ſeemingly undetermined whether to advance or retreat; and, being naturally timid, they are urged on to attack their enemies only by a conſciouſneſs of their ſuperior ſtrength. When ſhot at, however, or wounded, they attempt to fly; or, if they find that impracticable, they make a fierce and deſperate reſiſtance.

Theſe animals live on fiſh, ſeals, the carcaſes of whales, and even on human bodies; which laſt they often greedily dig out of their graves. Delighting in human blood, they are ſometimes ſo daring as to attack companies of armed men, and even to board ſmall veſſels. During the ſummer ſeaſon, they reſide on the iſlands of ice, frequently ſhifting from one to another. Being excellent ſwimmers, they dive with great agility; in which act battles ſometimes enſue between them and the morſe or the whale; in which the whale is generally victorious, being the moſt expert of the two in it's own element. If the Bear, however, is fortunate enough to find a young whale, it in general amply repays itſelf for the danger incurred by meeting with the parent.

The mutual affection which ſubſiſts between the female White Bear and it's young is ſo ſtrong, that they will rather die than deſert each other; and hiſtory furniſhes us with ſeveral remarkable inſtances, where the maternal love diſplayed by this animal has been at once extraordinary and affecting.

This creature ſeems to be entirely confined to the coldeſt regions of the globe, for it does not appear, from any reſpectable authority, to be met with any farther to the ſouthward than Newfoundland. Such Bears as have appeared in more temperate latitudes have been involuntarily carried thither on floating iſlands of ice, ſo that the countries of Norway and Iceland can only be acquainted with them through accident.

The fleſh of this animal is white, and taſtes like mutton. It's fat is melted for train oil, and that extracted from it's feet is uſed in medicine. The liver is ſaid to poſſeſs poiſonous qualities.

A few years ſince, one of this ſpecies was publicly exhibited in England. It appeared very furious; roared loud; and ſeemed conſtantly uneaſy, except when cooled by large quantities of water poured over it.

Land-Bears, ſpotted with white, and at other times wholly white, have ſometimes been obſerved, in a wandering ſtate, in thoſe parts of Ruſſia which border on Siberia; and are probably ſuch as have ſtrayed out of the lofty ſnowy mountains which divide the two countries.

Bear, Kamtschatka. The Bears of Kamtſchatka are neither large nor fierce; never attacking the inhabitants, unleſs they find them aſleep, and then ſeldom killing them, though they frequently tear the ſcalp from the back part of their heads; and, when fiercer than ordinary, lacerate ſome of the fleſhy parts, but never eat them. The people who have been thus wounded are called Dranki, and are frequently met with. It is remarkable, that the Bears of Kamtſchatka, though ſo numerous as to cover the fields like cattle in ſummer, never hurt women; but go about with them like tame animals, eſpecially when they gather berries. Sometimes, indeed, the Bears eat up the berries which the women have gathered; but that is the ſole injury they ever offer them.

In the ſeaſon when the fiſh enter the mouths of the rivers in vaſt ſhoals, great numbers of Bears come down from the hills, and ſettle in proper places for catching them; which they do in ſuch profuſion, that they only eat and ſuck the bones of the heads, neglecting the bodies: but when this plenty ceaſes, they are glad to gnaw the bones which they formerly deſpiſed. They frequently ſteal fiſh from the fiſhing-huts of the Coſſacks, though there is always a woman left to watch them; and to her, indeed, they never do any hurt.

Before the introduction of fire-arms, the people of Kamtſchatka uſed many devices for killing the Bears. Among others, the following ſeem moſt worthy of notice. Having cut ſeveral billets of wood, they ſtopped up the mouth of the den with them; theſe the Bear never failed to draw in, that his paſſage from his den might not be ſhut up. This they continued doing till he was ſo ſtraitened in his den, that he could not turn himſelf; they then dug down from above, and killed him with their ſpears. The Koreki, in order to catch the Bear, ſeek out ſome tree that is crooked above, on which they faſten a ſnare, and behind it place

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ſome proper bait; which the animal endeavouring to ſeize, is held faſt by the head or paw. Sometimes they place heavy logs of wood in ſuch ſituations as will make them fall with the ſlighteſt touch, ſo as to cruſh the Bear beneath their weight. Another method is, to lay a board driven full of iron hooks in the Bear's track, near which they place ſomething that eaſily falls down; and this terrifying the Bear by it's fall, he runs on the board with great force, and finding one fore-paw wounded, and ſeized by the hooks, he endeavours to free himſelf by beating the board with the other: both being thus fixed, he reſts on his hinder-legs, which occaſion the board to riſe before his eyes, and perplex him in ſuch a manner, that he ſoon becomes furious, and beats himſelf to death. The people about the Rivers Lena and Ilimé have a very odd method of catching them. They place a nooſe on the Bear's track or entrance to his den, faſtened at the end to a large log of wood: when the Bear finds himſelf entangled, and feels that the log prevents his walking eaſily, he takes it up, and carries it to ſome precipice, from whence he throws it down with great force, and of courſe falling with it, is violently bruiſed. However, he fails not to repeat this practice, till in the end he kills himſelf.

From the month of June to the end of harveſt, theſe Bears are very fat; but, in the ſpring, they are lean and dry. In the ſtomachs of thoſe killed in the ſpring, nothing is found but a frothy ſlime.

BEAVER. This animal is far leſs remarkable for the ſingularity of it's conformation, than for the intellectual powers it is obſerved to poſſeſs. It is the only quadruped which has a flat, broad tail, covered with ſcales, ſerving as a rudder to direct it's motion in the water. It is the only quadruped, alſo, which is furniſhed with membranes between the toes of the hind-feet ſolely, which ſupply the place of hands, as in the ſquirrel tribe. It is, ſtill farther, the only animal that, in it's fore-parts, entirely reſembles a quadruped; and, in it's hinder-parts, ſeems to approach to the nature of fiſhes, by having a ſcaly tail. In other reſpects, it's length, from the noſe to the tail, is about three feet; it's tail is eleven inches long, and three broad; and the animal is ſomewhat like a rat. It has ſtrong cutting teeth; ſhort ears, almoſt hid in the fur; and a blunt noſe. The hair is of a deep cheſnut-brown, and compoſed of two ſorts: the one long and coarſe; and the other ſhort, ſoft, fine, and ſilky. Like birds, it has but one vent for it's natural evacuations; a peculiarity in it's conformation of which we ſhould be inclined to doubt, did not the moſt celebrated naturaliſts concur in it's ſupport.

The Beaver ſeems to be the only remaining monument of brutal ſociety. In all countries where man is civilized, the lower ranks of animals, as Buffon judiciouſly remarks, are repreſſed and degraded. Either reduced to ſervitude, or treated as rebels, all their ſocieties are diſſolved, and all their united talents rendered ineffectual; their feeble arts have quickly diſappeared; and nothing but their ſolitary inſtincts, or thoſe foreign habits which they have received from human education, can now be traced.

The Beaver, from the effects of it's labours, which are ſtill to be ſeen in the remote parts of America, may teach us how far inſtinct may be aided by imitation. From thence we may alſo perceive to what a degree animals unaſſiſted either by language or reaſon, are capable of concurring for their mutual benefit; and of attaining, by dint of numbers, thoſe advantages which each, in a ſtate of ſolitude, ſeems unfitted to poſſeſs. Viewing the Beaver only in the light of an individual, and unconnected with others of it's kind, we ſhall find that many other quadrupeds excel it in cunning, and almoſt all in the powers of annoyance and defence. The Beaver, when kept in a ſtate of ſolitude or domeſtic tameneſs, appears to be a mild, gentle creature; familiar, but dull even to melancholy; without any violent paſſions or appetites; moving but ſeldom; making very few efforts to regain it's freedom; calm, and indifferent to all about it; without attachments or antipathies; and never ſeeking to conciliate the favour of man, nor aiming at offending him. In thoſe qualities which render animals ſerviceable to man, the Beaver appears inferior to the dog: it ſeems neither formed to command nor to ſerve; and is only adapted to live among it's own kind. Thus the talents of this creature are entirely repreſſed in ſolitude, and are only brought to light by it's being placed in ſociety. When accidentally detached from it's companions, it neither exhibits induſtry nor cunning, and appears incapable of guarding itſelf from the moſt obvious and inartificial ſnares of the hunters. Far from attacking any other animal, it ſcarcely poſſeſſes the arts of defence; and, preferring flight to cunning, like all other wild animals, it only reſiſts when driven to extremity, and when it's ſpeed can no longer avail.

About the months of June and July, the Beavers begin to aſſemble in great numbers, and to form a ſociety, generally conſiſting of more than two hundred, which continues during the greateſt part of the year. The place of their rendezvous, which is always near the margin of ſome lake or river, is commonly made the ſcene of their future action. If the waters are always on a level, they diſpenſe with building a dam; but if they are ſubject to floods and falls, they then ſet about erecting a pier over the river or lake, ſo as to form a kind of dead water in thoſe parts which lie above and below it. This dam, or pier, is often fourſcore or a hundred feet long, and ten or twelve feet thick at the baſe. If we compare the greatneſs of the work with the powers of the architects, it will appear enormous. But the ſolidity with which it is built is ſtill more aſtoniſhing than it's extent: it is uſually formed in the moſt ſhallow part of the river, and where ſome great tree overhangs the ſtream, which they pitch upon as the principal ſtay to their fabric; and, though it is often thicker than a man's body, they inſtantly ſet about hewing it down with their teeth; and ſoon level it on the very ſide on which they wiſh it to fall, which is always acroſs the ſtream. They then proceed to cut off the top branches, in order that the tree may lie cloſe and even, and ſerve as the principal beam of the building. The dyke, or pier, deſcends with a ſlope on that ſide next the water; which gravitates on the work in proportion to it's height, preſſing it with a prodigious force towards the earth. The oppoſite ſide is erected perpendicularly; and that declivity, which at the baſe is about twelve feet broad, diminiſhes till it terminates in a breadth of only two feet.

Wood and clay are the materials of which this mole conſiſts. The Beavers cut, with ſurprizing expedition, pieces of wood, nearly as thick as a man's arm, and five or ſix feet long, according as the ſlope aſcends; and theſe they drive into the ground at a

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ſmall diſtance from one another, intermingling with them others which are ſmaller and more pliant. Leſt the water, however, ſhould find a paſſage through the intervals or ſpaces between them, and leave the reſervoir dry, they have recourſe to a particular kind of clay, with which they ſtop up all the crevices, both within and without. They then continue to raiſe the dyke in proportion to the elevation of the water, and the quantity they wiſh to confine; and being conſcious that the conveyance of their materials by water is more eaſily effected than by land, they avail themſelves of the current of the ſtream, and ſwim with their mortar on their tails, and their ſtakes between their teeth. If the Beavers find their works in the leaſt damaged by the violence of the water, or by the feet of the huntſmen, every part of them is narrowly inſpected, and the breach perfectly repaired with the utmoſt diligence and application. But when the hunters intrude too often, the animals either work during the night, or entirely abandon their fabric, and ſeek a more retired ſituation. When the Beavers have thus far compleated their habitation, their next care is to erect their ſeveral apartments, which are either round or oval, and divided into three ſtories, raiſed one above another; the firſt, which is that below the level of the cauſeway, being for the moſt part full of water. Theſe little cottages, which are built in a very firm and ſubſtantial manner on the edge of the reſervoir, are always in the form above-mentioned; that, in caſe of the water's increaſe, they may have a higher retreat to fly to. If they find any little iſland contiguous to their reſervoir, they there fix their manſion; ſuch a ſituation being not only more ſolid, but leſs liable to be overflowed: but if they cannot pitch on ſuch a commodious ſpot, they fortify their habitations with piles, as a defence againſt the wind as well as the water. At the bottom are two inlets to the ſtream; one conſiſting of a paſſage to their bath, which is always kept neat and clean; and the other leading to that part of the ſtructure into which every thing is conveyed which can either ſoil or damage their upper apartments. They have likewiſe a third opening or door-way, conſiderably higher, contrived for the purpoſe of preventing their being ſhut up by any external accident, when froſt and ſnow have cloſed the apertures of the lower floors.

In the conſtruction of their lodgings, the Beavers make uſe of the ſame materials as in their dykes. The walls of the former are about two feet thick, and raiſed perpendicularly. They cut off with their teeth, in a very neat manner, all thoſe parts of the wood which project beyond the walls; and then, having mixed ſome clay and withered graſs together, they work them up into a kind of mortar, with which, by the help of their tails, they plaiſter all their works both internally and externally. The inſides of their habitations, which are vaulted, are ſufficiently capacious for the reception of eight or ten Beavers; and, when conſtructed in an oval figure, they are generally twelve feet long, and eight or ten feet broad. If the number of inhabitants increaſes, the edifice is proportionably enlarged: and we are credibly informed, that four hundred Beavers have ſometimes been diſcovered reſiding in one large manſion-houſe, divided into a vaſt number of apartments, but at the ſame time preſerving a free communication with one another.

In the more northern climates, the habitations of theſe animals are finiſhed in Auguſt, or early in September; when they begin to lay in their ſtores. During the ſummer months, they regale themſelves every day on the choiceſt fruits and plants the country affords; and give themſelves up to a ſpecies of epicuriſm: but, in winter, they ſubſiſt principally on the wood of the birch, the plane, and ſome other trees, which they ſteep in freſh-water from time to time, in quantities proportioned to the number of inhabitants. The branches they uſe for food are frequently ten feet long; thoſe of the largeſt dimenſions are conveyed to their magazines by a whole troop of Beavers; but the ſmaller ſorts can generally be managed by one. Each of them, however, takes a different way; and has his own proper walk aſſigned him, in order that one may not interrupt another in the proſecution of his labour. Their wood-yards are larger or ſmaller in proportion to the number in a family: and, according to ſome curious naturaliſts, the uſual ſtock of timber for the accommodation of ten Beavers, conſiſts of about thirty feet in a ſquare ſurface, and ten in depth. Theſe logs are not thrown up in one continued pile, but laid acroſs each other, with intervals between them, in order that ſuch quantities only as are wanted for immediate conſumption may be come at with the greater facility. This timber is again cut into ſmall particles, and conveyed to one of their largeſt lodges, where the whole family meet, in order to conſume their reſpective allotments, which are divided in a very impartial and equal manner. Sometimes, however, they venture into the woods; and at ſuch ſeaſons they have an opportunity of regaling themſelves and their young with more acceptable food.

Thoſe who are accuſtomed to hunt theſe animals, being perfectly aware that green wood is much more grateful to them than that which is old and dry, place a conſiderable quantity round their lodgments; and, when they ſally forth to ſeize it, either catch them in ſnares, or take them by ſurprize. When the froſts are very ſevere, the hunters ſometimes break large holes in the ice; and, on the Beavers reſorting to theſe apertures to breathe the freſh air, they either kill them with their hatchets, or cover the holes with large ſubſtantial nets. This being done, they undermine and ſubvert the whole fabric; when the Beavers, expecting to make their eſcape in the uſual way, fly with precipitation to the water; and, ruſhing to the opening, fall directly into the net.

Beſides the aſſociated Beavers, there is another ſort called terriers; deſtitute of either induſtry or ſagacity to conſtruct habitations like the former. Theſe burrow in the banks of rivers, making their holes beneath the freezing depth of the water, and working up for a great number of feet.

The ſkins of Beavers, which form a very lucrative article of commerce, are diſtinguiſhed under the appellations of coat Beaver, parchment Beaver, and ſtage Beaver: the firſt is uſed by the Indians for coverlets; the ſecond obtains it's name from the reſemblance which the lower ſide bears to parchment; and the third is what the Indians kill out of ſeaſon, on their ſtages or journies.

From the inguinal gland of the Beaver is taken that valuable drug called caſtoreum. The Ruſſian caſtoreum is ſo much preferable to the American, that the former is ſold for two guineas a pound; whereas the latter is worth no more than eight ſhillings. It is eſteemed an excellent medicine in all nervous diſorders; particularly in hyſteric fits, and the general train of feminine complaints.

Beavers inhabit Europe from Lapland to Languedoc;

guedoc; they abound in the north; and they are ſometimes ſeen in the Rhone, the Garrone, the Danube, the Rhine, and the Viſtula. They are alſo found in great plenty in the Ruſſian Aſiatic dominions; but they are by far the moſt numerous in North America. Their fleſh, when preſerved by being dried in the ſmoke, is eſteemed very delicious; but their tails are reckoned the moſt ſavoury parts.

BEAVER, MUSK. The Muſk Beaver has a thick obtuſe noſe; large eyes; and ſhort ears, which are almoſt hid in the fur. The toes on each foot are ſeparated, the hind ones being fringed on each ſide with ſtrong hair cloſely ſet together; the tail, which is compreſſed ſide-ways, is very thin at the edges, and covered with ſcales intermixed with a few hairs; the head and body are of a reddiſh brown colour; and the breaſt and belly are aſh-coloured tinged with red. The length of the body, from the noſe to the tail, is about twelve inches; that of the tail is about nine inches; and the whole figure exactly repreſents the common Beaver in miniature.

The Muſk Beaver is a native of North America; and breeds three or four times a year, bringing forth from three to ſix at a time: the male and female conſort together during the ſummer; and when winter approaches, the animals unite their families, and retire into ſmall round edifices covered with domes compoſed of plants and reeds cemented with clay. At the bottoms of theſe buildings there are ſeveral conduits, through which they paſs in ſearch of food; and for this they have daily occaſion, as they poſſeſs none of the provident foreſight of the common Beaver. Their habitations, during the winter ſeaſon, are covered many feet deep with ſnow and ice; but they frequently creep out, and feed on the roots which lie beneath. They erect new habitations every year, and deſert their old ones.

The fur of this animal is very ſoft, and much valued; and it's fleſh has an exquiſite muſky ſmell during the ſummer ſeaſon.

BEAVER, SEA. This animal has not the ſmalleſt reſemblance to the common Beaver; but was at firſt ſo called merely from the downy ſoftneſs of it's hair. It is as large as the ſea-cat: it's ſhape reſembles that of the ſeal, excepting it's head, which is like that of a bear; it's fore-feet are longer than it's hind-feet; it's teeth are ſmall; it's tail is ſhort and flat, and ſharp towards the point; and it's hair is thick, and black as pitch: that of old Beavers is grey; and that of young ones is long, browniſh, and remarkably ſoft.

This is the moſt peaceable of all ſea animals; for it never makes any reſiſtance, but only endeavours to ſave itſelf by flight. The females are very affectionate to their young, and carry ſuch as cannot ſwim on their bellies between their fore-feet; for, till the little ones are capable of ſwimming, the mothers ſwim on their backs. When the fiſhermen purſue them, they never quit their offſpring till the very laſt extremity; and, if they happen to let them ſlip, preſently return to the place from whence their cries are heard.

There are three ways of catching Sea-Beavers: firſt, by nets placed among the ſea-cabbage, whither the animals retire in the night-time, or during ſtorms; ſecondly, by chacing them in boats; and, thirdly, by killing them on the ice.

BECASSINE. A name given by ſeveral naturaliſts to the tringa minor; or, as it is uſually called with us, the ſand-piper.

BECCIFAGO. A ſmall bird which feeds on vegetables, berries, and other fruits; and is commonly ſeen in the north of England, where it obtains the name of the petty-chaps. It is ſcarcely ſo large as the common linnet; and is remarkable for the ſhortneſs of it's body. It's head, neck, back, wings, and tail, are generally of a greeniſh grey; but, in ſome, it is of a greeniſh brown.

BECUNE; or, WEST-INDIAN SEA PIKE. This fiſh bears a ſtrong reſemblance to the river pike, except that it is conſiderably larger, being ſometimes eight feet long. It poſſeſſes very voracious appetites; and is extremely dangerous in it's own element, becauſe capable of biting with more facility than the ſhark. It's fleſh has the ſame taſte as that of the freſh-water pike: but there is much danger in eating it; for, unleſs the teeth appear white, and the liver retains a ſweet ſmell, it is highly deleterious.

BEE. A well-known inſect; the hiſtory and œconomy of which, though they have engaged the ſtudy of naturaliſts, at different periods, for a ſeries of near two thouſand years and upwards, are ſtill but imperfectly aſcertained. Reaumur, indeed, who ſpent a great part of his life in the contemplation of this little animal, has furniſhed us with a deſcription ſufficiently minute: but, hurried away by an enthuſiaſtic admiration of the ſubject of his reſearches, he has aſcribed qualities and habitudes to this curious race which moſt naturaliſts are now apt to conſider as extravagant.

It is certain that every hive is compoſed of three different ſorts of Bees. The firſt ſort conſiſts of thoſe called labouring Bees, which are by far the moſt numerous, and are generally regarded as neutral, being neither male nor female, but apparently produced for the purpoſes of labour, and for ſupplying the young Bees with proviſions while in an adoleſcent ſtate. The ſecond ſort is that called drones; which are of a darker hue, as well as larger, and longer by a third, than the former: and of theſe, which are ſuppoſed to be the males, there is ſeldom above one hundred in a hive conſiſting of ſeveral thouſands. The third ſort, which is that called queen Bees, and who are ſaid to lay all the eggs from which the whole ſwarm is hatched, is much larger than either of the former, and ſtill leſs plentiful: ſome naturaliſts have aſſerted, that there is only one in each ſwarm; but later enquirers into the œconomy of Bees affirm that there are frequently five or ſix.

If we examine the ſtructure of the common Bee, the firſt remarkable part which preſents itſelf is the trunk, an inſtrument ſerving to extract honey from flowers: it is not formed, like that of other flies, in the ſhape of a tube, by which the fluid is to be ſucked up; but rather like a tongue, to lick it away. The inſect is alſo furniſhed with teeth, which aſſiſt it in making wax: this ſubſtance, which is collected from flowers, like honey, conſiſts of that duſt or farina which contributes to the fecundation of plants, and is moulded into wax at leiſure. Every Bee, when it leaves the hive in queſt of this precious ſtore, enters into the cups of ſuch flowers as ſeem to be charged with the greateſt quantities of yellow farina. As the body of the animal is entirely covered with hair, it rolls itſelf within the flower, and ſoon becomes entirely enveloped in this duſt, which it afterwards bruſhes off with it's two hind-legs, and kneads into two little balls. In the thighs of it's hind-legs there are two ſmall cavities, edged with hair; and

into theſe the animal ſticks it's pellets. Thus employed, the Bee flies from flower to flower, increaſing it's ſtore of honey, and adding to it's ſtock of wax, till the ball on each thigh becomes as big as a grain of pepper; after which it intermits it's labour, and returns to it's hive.

The belly of the Bee is divided into ſix annulations or rings, which are capable of being contracted or expanded at pleaſure. Beſides the inteſtines, the inſect is internally furniſhed with a honey-bag, a venom-bag, and a ſting. The honey-bag, which is as tranſparent as cryſtal, contains the honey which the Bee has bruſhed from the flowers, the greateſt part of which is carried to the hive, and poured into the cells of the honeycomb, while the remainder ſerves for the animal's own nouriſhment; for, during the ſummer ſeaſon, it never touches it's winter's hoard. The ſting of this induſtrious creature, which is imparted to it by nature as a defence againſt it's enemies, is compoſed of three parts; namely, the ſheath, and two extremely ſmall and penetrating darts; and both theſe darts are furniſhed with ſeveral points, or barbs, like thoſe of a fiſh-hook, which rankling in the wound, render the ſting more painful. This inſtrument, however, would prove but a weak defence, if the Bee did not poiſon the wound. The ſheath, by means of it's ſharp point, makes the firſt impreſſion; and this being followed by that of the darts, the venomous fluid is ſpeedily injected. The former weapon ſometimes ſticks ſo faſt in the fleſh, that it is obliged to be left behind, and the wound is thereby much enflamed; but the Bee does not long ſurvive it's loſs.

From examining the Bee ſingly, we proceed to an enquiry into it's habits in ſociety; and, in this view, we behold an animal active, vigilant, laborious, and diſintereſted: ſubject to regulations, and perfectly ſubmiſſive. All it's proviſions are laid up for the community; and all it's arts are employed in building a cell, deſigned for the benefit of poſterity.

The ſubſtance of which the cells of Bees are formed conſiſts of wax, faſhioned into convenient apartments for themſelves and their young. When they begin to work in their hives, they divide themſelves into four companies: one of which traverſes the fields in queſt of materials; another is occupied in laying out the bottoms and partitions of their cells; a third is employed in ſmoothing their inſides from any remaining aſperities; and the fourth company either brings food for the reſt, or relieves thoſe who return with their reſpective burdens. They are not, however, uniformly fixed to the ſame avocations, but frequently change the taſks aſſigned them: thoſe who have been at work in the hive being permitted to go abroad, while thoſe who have been in the fields are called upon to ſupply their places. They even ſeem to have ſigns by which they underſtand each other: for when any one of them wants food, it bends down it's trunk to the Bee from whom it is expected; which immediately opens it's honey-bag, and lets ſome drops fall into the other's mouth, which is opened on purpoſe to receive them.

Such is the aſtoniſhing and unwearied diligence of theſe creatures, that, in one day's time, they are capable of conſtructing cells ſufficiently numerous to contain three thouſand Bees; and which, if examined, will be found to be formed in the moſt exact proportion. Pappus, an ancient geometrician, informs us that, of all other figures, hexagons are the moſt convenient; for when placed ſo as to touch each other, the moſt commodious room will be given, while the leaſt poſſible will appear to be loſt. The cells of the Bees are perfect hexagons; and theſe, in every honeycomb, are double, opening on either ſide, and cloſing at the bottom. The bottoms are compoſed of little triangular panes; which, when united together, terminate in a point, and lie exactly upon the extremities of the upper panes of the ſame ſhape, but in oppoſite cells. Theſe lodgings have ſpaces reſembling ſtreets running between them, large enough to give the Bees a free paſſage in and out, and yet narrow enough to preſerve the neceſſary degree of heat. The mouth of every cell is defended by a border, which, though it renders the entrance ſomewhat leſs than the inſide of the cell, ſerves to ſtrengthen the whole fabric. Their cells anſwer very different purpoſes, being at once the repoſitories for their wax, their honey, and their young.

It is univerſally allowed, that the habitations of Bees ought to be very cloſe: and what their hives want in this reſpect, owing to the negligence or unſkilfulneſs of man, theſe animals are ſure to ſupply by their own induſtry; ſo that, when firſt hived, it is their principal care to ſtop up every chink. For this purpoſe, they make uſe of a reſinous gum, more tenacious than wax, and of a very different nature. This gum, which the ancients called propolis, grows pretty hard, but is nevertheleſs capable of being in ſome meaſure ſoftened by the heat: it is often found to vary in conſiſtence, colour, and ſmell; it has generally, however, an agreeable aromatic odour when warmed, and ſome perſons conſider it as a moſt grateful perfume. When the Bees begin to work with this material, it is extremely ſoft; but, acquiring a firmer conſiſtence daily, it at length aſſumes a brown colour, and becomes fit for every purpoſe intended. Some have ſuppoſed this gum to be expreſſed from the willow, the birch, and the poplar; but, whatever may be the reſources from which it is drawn, the hives of the Bees are all internally plaiſtered with this compoſition.

From the hurry and buſtle the ſwarm ſeems to be in, when examined through a glaſs hive, the whole at firſt ſight appears like anarchy and confuſion; but the ſpectator, on a cloſer inſpection, ſoon diſcovers every animal ſedulouſly employed, and following one purſuit with a ſettled purpoſe.

The teeth of the Bees are the inſtruments by which they model and faſhion their various buildings with ſuch aſtoniſhing ſymmetry and perfection. They begin at the top of the hive, and ſeveral of them are employed at one time in conſtructing the double-faced cells.

The formation of their combs, which is attended with infinite labour, is compleated by inſenſible additions; and not caſt at once in a mould, as ſome have idly imagined. The cells for their young are moſt carefully formed; thoſe deſigned for lodging the drones are larger; and that meant for the queen Bee is the largeſt of all. It is evident that theſe apartments alſo ſerve at different times as ſtorehouſes for honey. Every worm, before it is transformed into an aurelia, ſuſpends it's old ſkin on the partition of it's cell; which, while it ſtrengthens the fence, at the ſame time diminiſhes the extent of it's late apartment. The ſame cell, in the ſpace of one ſummer, is often tenanted by three or four worms in ſucceſſion; and, the next ſeaſon, by three

three or four more. Each worm takes particular care to fortify the pannels of it's cell, by hanging up it's ſpoils there; and thus the partitions being lined ſix or eight deep, become at laſt too narrow for a new brood, and are applied to the purpoſe before-mentioned. Thoſe cells where honey only is depoſited, are much deeper than the reſt; and, when the increaſe of this delicious ſtore happens to be ſo great, that there is not ſufficient room for it, the Bees either lengthen their combs, or build others conſiderably longer than the former. Sometimes they work in three combs at a time; for, in that caſe, more Bees may be thus employed, without confuſing each other.

Honey, however, as before obſerved, is not the only food on which theſe animals ſubſiſt. The farina of flowers, from which their wax is formed, is one of their moſt favourite repaſts: on this they in a great meaſure ſubſiſt during the ſummer; and alſo lay up a large winter ſtock of it. When the flowers on which Bees generally feed are not fully blown, and this duſt, or farina, does not appear in ſufficient quantities, they pinch the tops of the ſtamina in which it is contained with their teeth; and thus anticipate the progreſs of vegetation. In April and May, the Bees are conſtantly employed from morning till evening in collecting this food; but, in the middle of ſummer, when the weather proves very warm, they generally relinquiſh that labour before noon.

The Bee is furniſhed with a ſtomach for it's wax, as well as with one for it's honey: in the former, the powder is altered, digeſted, and concocted into real wax; and is again ejected by the ſame paſſage by which it was ſwallowed. Every comb, when newly formed, is white; but, as it grows old, it gradually becomes yellow, and afterwards almoſt black. Beſides the wax thus digeſted, there is a large portion of the powder kneaded up for food in every hive, and kept in ſeparate cells, for winter proviſion: this, among country people, obtains the name of Bee-bread; and is ſaid to contribute to the health and ſtrength of the animals during the inclemency of winter. Thoſe who rear Bees may rob them of their honey, and feed them with treacle during that ſeaſon; but no proper ſubſtitute has yet been diſcovered for the Bee-bread, without which the inſects ſoon become conſumptive, and die.

The Bee extracts the honey from that part of the flower called the nectarium. From it's mouth this delicious fluid paſſes into it's gullet, and from thence into it's firſt ſtomach or honey-bag; which, when diſtended, appears like an oblong bladder. When it has ſufficiently filled it's firſt ſtomach, it returns to the hive, where it diſgorges the honey into one of the cells; though it ſometimes delivers it to one or other of it's ſociety, at the mouth of the hive, and inſtantly flies off for a freſh ſupply. Some of the honeycombs are always left open for common uſe; while others are ſtopped up till there is a neceſſity for opening them. Each of theſe combs is carefully covered with wax; and ſo well cloſed, that the ſmalleſt breath of air cannot poſſibly gain admiſſion.

If we conſider this little animal attentively, it will appear that, after the neceſſary precautions for the immediate preſervation of the community, it's ſecond care is turned to the continuance of poſterity. How numerous ſoever the multitude of Bees in a ſwarm may appear, if we credit the inquiſitive and accurate Reaumur, they all derive their origin from one ſingle parent, called the queen Bee. It is, indeed, ſurprizing that a ſingle inſect ſhould, in the courſe of one ſummer, give birth to more than twenty thouſand young; but, were we to open it's body, our wonder would quickly ceaſe, as the number of eggs contained in it at one time ſometimes amount to five thouſand. The queen, whoſe exiſtence is of ſuch importance to her ſubjects, may eaſily be diſtinguiſhed from the reſt by her ſize, as well as the figure of her body. On her preſervation depends the welfare of the whole commonwealth; and the homage paid her by all the reſt of the ſwarm indicates their great concern for her perſonal ſecurity. If this inſect be ſtudiouſly obſerved, ſhe will be ſeen, at times, attended by a numerous retinue, marching from cell to cell, and depoſiting a ſmall egg in each. The Bees which generally compoſe her train, are ſuppoſed to be thoſe males which ſerve to impregnate her by turns: they are larger and blacker than the common Bees, but are unfurniſhed with ſtings, have no inclination for labour, and ſeem formed merely to propagate the ſpecies, and to attend the queen whenever ſhe thinks proper to iſſue from the ſecret retreats of the hive, where ſhe uſually reſides: on the union of theſe two kinds, therefore, all expectations of a future progeny depend.

Though the working Bees are of no ſex, and only labour for another's offſpring, ſuch is their attachment to the queen, that, if ſhe happens to die, they inſtantly intermit their labours, and take no farther care of poſterity. If, however, in this ſtate of general deſpair, another queen preſents herſelf, they immediately recognize her as their ſovereign, and diligently return to their former habits of induſtry. However, this extraordinary fertility of the queen Bee, and the great deference paid her by the reſt, have been controverted by ſome recent obſervers; who aſſert, that the common Bees are parents themſelves; that they depoſit their eggs in cells previouſly prepared; and that the females are impregnated by the males, and bring forth a progeny wholly their own.

When the queen Bee has depoſited a ſufficient number of eggs in the cells, the working Bees immediately undertake the care of the riſing poſterity; and are obſerved to leave off their uſual employments, in order either to conſtruct proper receptacles for eggs, or to compleat thoſe which are already begun. They purpoſely build little cells, extremely ſolid, for the reception of the young brood, in the conſtruction of which they uſe a great deal of wax. There is uſually but one egg depoſited in each cell; but, when the fecundity of the queen exceeds the number of cells already prepared, there are ſometimes three or four eggs crowded together in the ſame apartment. This, however, is an inconvenience of which the working Bees will by no means admit: for, being ſenſible that two young Bees cannot thrive properly in a ſpace aſſigned for one only, they take care to leave a ſeparate cell for every egg, and either remove or deſtroy the ſuperfluous ones. This egg is fixed to the bottom of the cell, and touches it in a ſingle point; and, a day or two after it has been depoſited, the worm protrudes itſelf from the ſhell, and exhibits the appearance of a maggot rolled up in a ring, and lying ſoftly on a bed of a whitiſh-coloured jelly, on which the little animal begins to feed. The working Bees now attend it with the moſt anxious and parental tenderneſs; furniſhing it very frequently with a ſupply of this whitiſh ſubſtance, and watching the cell with unremitting

care.

care. Thus attended, and plentifully fed, the worm, in leſs than ſix days, arrives at it's proper growth, when it no longer accepts the offered food. When the other Bees perceive that it has no farther occaſion to be thus fed, they perform the laſt office of their tender regard, by ſhutting up the little animal in it's cell, and walling up the mouth of it's apartment with wax; and, having thus ſecured it from every external injury, they leave it. No ſooner, however, is the worm thus encloſed, than, from a ſtate of inactivity, it begins to labour, extending and ſhortening it's body; and, by this means, lining the walls of it's apartment with a kind of ſilken tapeſtry, which it ſpins after the manner of caterpillars before they undergo their laſt transformation. When the cell is thus prepared, the animal is ſoon transformed into an aurelia; but different from that of the common caterpillar, as it exhibits not only the legs, but alſo the wings, of the future Bee, in it's preſent ſtate of confinement. Thus, in about twenty days after the egg is laid, the Bee is compleatly formed, and fitted to undergo the fatigues of it's ſtate; and all it's parts having acquired their proper ſtrength and conſiſtence, the young animal burſts from it's priſon, by piercing with it's teeth the waxen door which confines it. When juſt freed from it's cell, it is moiſt, and ſeems to be incommoded with the ſpoils of it's former ſituation; but a band of officious Bees is ſoon ſeen to flock round it, and to lick it clean on all ſides with their trunks; another, with equal aſſiduity, is obſerved to feed it with honey; and a third begins to cleanſe the cell that has juſt been left, to carry the ordure out of the hive, and to fix a place for the new inhabitant. The young Bee, however, ſoon repays their care by it's induſtry; for, as ſoon as it's external parts become dry, it diſcovers it's natural propenſity to labour, and induſtriouſly begins it's taſk, which it unremittingly purſues through life.

The little inſect, thus properly equipped for duty by it's fellow-labourers, and at the ſame time inſtructed by nature, goes in queſt of flowers; chuſing thoſe which are calculated to yield it a ſupply, and rejecting ſuch as are either deſtitute of honey, or have been drained already by other adventurers: and, when loaded, is never at a loſs to find it's way back to the common habitation. After the firſt ſally, it begins to gather the mealy powder that is contained in every flower, and is afterwards converted into wax; and, the very firſt day on which it commences it's labours, it returns to the hive with two large balls of this ſubſtance ſticking to it's thighs.

When the Bees begin to break their priſons, there are generally about a hundred liberated in one day; and thus, in the ſpace of a few weeks, the number of the inhabitants of one hive becomes ſo great, that there is no room for the new-comers, who are ſcarcely all excluded from their cells, when they are obliged by the old Bees to iſſue forth in queſt of new habitations: however, while there is room enough in the hive, the Bees remain quietly together; and neceſſity alone occaſions a ſeparation. Sometimes, indeed, the young brood refuſe to depart, and even venture to reſiſt their progenitors. The young Bees are diſtinguiſhed by being browner than the old ones, and by being covered with white hair; and the old ones are of a light colour, with red hair. The two armies are therefore eaſily diſtinguiſhable; and though dreadful battles often enſue between them, the veterans generally prove victorious.

The ſwarms make their appearance at different ſeaſons of the year, and according to the variation of the climate; of which migrations there are ſeveral general prognoſtics. The night preceding, an unuſual buzzing is heard in the hive; and the next morning, though the weather be ſoft and inviting, they ſeem not to obey the call, being intent on more important buſineſs within: all labour is diſcontinued in the hive; and every Bee is employed in forcing, or reluctantly yielding, a ſubmiſſion. At length, after ſome noiſe and tumult, a queen Bee is choſen, to guard, rather than conduct, the young colony to other habitations; and then they are marſhalled without any apparent conductor. In leſs than a minute, they leave their native abode; and, forming an orb round their proteſtreſs, they ſet off, without ſeeming to know the place of their deſtination, or having any pre-concerted rout. The uſual time of ſwarming is from ten in the morning till three in the afternoon, when the ſun ſhines bright, and invites them to ſeek their fortunes. They flutter for a while in the air, and ſometimes undertake a diſtant journey; but more frequently are contented with ſome neighbouring aſylum, the branch of a tree, the top of a chimney, or ſome other expoſed ſituation.

It is remarkable, that all animals which have been long under the protection of man, ſeem to loſe a part of their natural ſagacity in providing for themſelves. In thoſe countries where the Bees are wild, and unprotected by man, they are always ſure to build their waxen cells in the hollows of trees; but with us they appear improvident in their choice; and the firſt green branch which ſtops their flight, is deemed ſufficient for their abode. It does not even appear that the queen chuſes the place where they are to alight; for numbers of the ſwarm, when they conceive a predilection for any particular branch, ſpontaneouſly ſettle on it; others follow their example; and at laſt the queen herſelf, finding the majority of the ſwarm convened together, condeſcends to place herſelf among them. The queen being ſettled, the reſt of the ſwarm ſoon flock around her; and, in about a quarter of an hour, the whole body ſeems to be perfectly at reſt.

It ſometimes happens that two or three queens preſide over a ſwarm; in which caſe the colony is divided into parties: but as one particular queen has generally more influence than the others, the Bees gradually deſert the weakeſt, and ſhelter themſelves under their moſt powerful protector. The deſerted queens do not long ſurvive this treatment; but, taking refuge under the new ſovereign, they are ſoon diſpatched through the jealouſy of their rival. Till this cruel execution is performed, the Bees never begin their labours; and, ſhould a queen Bee belonging to the new colony be left in the old hive, ſhe is ſure to undergo the ſame fate. However, the Bees never ſacrifice any of their queens while the hive is full of wax and honey; for, under ſuch circumſtances, they are aware that there can be no danger in maintaining a plurality of breeders.

The ſwarm being conducted to a place of ſafety, and the policy of government ſettled, the Bees ſoon reſume their accuſtomed labours; and the formation of cells for the reception of honey and of the riſing progeny, as well as the impregnation of the queen, now employ their unceaſing induſtry. But, towards the latter end of ſummer, when the colony is ſufficiently ſtocked with inhabitants, a cruel, though

though neceſſary, piece of policy, takes place. The drone Bees (generally about a hundred in each hive) are marked for deſtruction; and thoſe devoted animals, who had hitherto led a life of indolence and pleaſure, and whoſe only employment conſiſted in impregnating the queen, and rioting on the labours of the hive, without improving the common ſtock, now ſhare the fate of mere voluptuaries, and fall a ſacrifice to the common reſentment of the ſociety. The working Bees declare war againſt them in a body; and, in the ſpace of two or three days, the ground all round the hive is ſtrewed with the dead. Nor are the labouring Bees contented with this ſacrifice; they even diſpatch ſuch drones as are yet remaining in the cells in their worm-ſtate, and eject their bodies from the hive.

When a hive ſends out ſeveral ſwarms in a year, the firſt is always the beſt, as well as the moſt numerous; for, having the greateſt part of the ſummer before them, they have the more time for making wax and honey, and conſequently their labours are the moſt valuable to their proprietor. Though the ſwarm is principally made up of the younger Bees, thoſe of all ages generally compoſe the number of emigrants: and as a ſingle hive ſometimes contains upwards of forty thouſand inhabitants, ſuch a vaſt body may well be ſuppoſed to work with great expedition. Such, in fact, are their exertions, that in leſs than twenty-four hours they often form a ſeries of combs twenty inches in length, and ſeven or eight in breadth; and they not unfrequently fill their hives with wax in leſs than five days. Generally, however, the firſt fifteen days are employed in making wax.

Columella directs, that the apiary, or Bee-garden, be ſituated ſo as to face the ſouth; that it be in a valley, that the loaded Bees may with greater eaſe deſcend to their homes; that it be near the habitations of men, on account of the conveniency of watching them, yet ſo placed as not to be expoſed either to noiſome ſmells or the diſturbance of men or cattle; that it be ſurrounded with a low wall; and that, if poſſible, a running ſtream be near it. A farm, however, or even a country, may be overſtocked with theſe induſtrious animals; for a certain number of hives always require a proportionable quantity of flowers for the ſubſiſtence of the Bees they contain.

When the flowers in the vicinity of the hives of theſe inſects are all rifled, they are of courſe obliged to take more extenſive ranges: but their indefatigable abilities may be over-taſked; for they frequently either become weary in the purſuit, are devoured by birds, or beat down by the wind and rain. From this conſideration, in ſome parts of France and Piedmont, the natives have conſtructed a kind of barge, capable of containing from threeſcore to a hundred Bee-hives, and well defended from the inclemency of an accidental ſtorm; and with theſe the owners ſuffer themſelves to float gently down the ſtream. As the Bees are continually chuſing their flowery food along the banks, they are furniſhed with ſweets before unrifled; and thus a ſingle floating Bee-houſe, during a favourable ſeaſon, amply repays the care of the proprietors, by yielding a conſiderable return of honey. Were this method adopted in England, as our rivers are leſs rapid, and their banks more flowery than thoſe of moſt other countries, ſuch an employment might probably yield the aſſiduous ſwain an eaſy and comfortable maintenance; while the advantages reſulting from it would be proportionably great.

Bees collect two ſorts of wax; the one coarſe, and the other fine. The coarſer ſort is the beſt, and is generally diſtinguiſhed by the name of propolis; with which, as before obſerved, theſe induſtrious inſects ſtop up all the holes and crevices of their hives. Being much more reſinous than the finer wax, it is conſequently better adapted to reſiſt the moiſture of the ſeaſon, as well as to preſerve their works warm and dry within. The fine wax is as neceſſary to the preſervation of the Bees as the honey itſelf; for with it they conſtruct their lodgings, and cover the cells of their young; and in it they depoſit their ſtores of honey.

There are alſo two kinds of honey; the white and the yellow: the white is taken from the honeycombs without the aſſiſtance of fire; while the yellow is extracted by heat, and ſqueezed through bags, in a preſs. The beſt honey is new, thick, and granulated; of a clear tranſparent colour; of an aromatic ſmell; and of a ſweet lively taſte. The honey of mountainous countries is preferable to that of champain ones; and the honey made during the vernal ſeaſon is more highly eſteemed than that gathered in ſummer; while the laſt is ſtill more valuable than that of autumn, when the flowers begin to fade, and conſequently to loſe their balmy fragrance. Nothing, however, can be more inhuman than the modes uſually adopted in order to the poſſeſſion of this valuable treaſure. Were we to kill the hen for it's egg, the cow for it's milk, or the ſheep for it's fleece, all would inſtantly perceive how much we acted contrary to our own intereſts; and yet a conduct in ſome meaſure ſimilar is practiſed yearly with reſpect to the induſtrious Bees. Would it not be more wiſe, as well as more humane, to content ourſelves with taking away a portion of their wax and honey, as is the practice in ſeveral other countries? With us, when a hive has been doomed to deſtruction, a hole is dug near it, and a ſtick, at the end of which a rag ſmeared with melted brimſtone is affixed, is drove into it: after which the rag is ſet on fire; and the hive being placed over the flame, the earth is inſtantly thrown up all around, that none of the ſmoke may eſcape. In a few minutes all the Bees appear as if dead; and, in a little more time, they would be irrecoverably ſo: but it has been proved by experiment, that thoſe Bees which have only been affected by the fumes of the brimſtone recover again; and hence it ſeems certain, that the fumes of brimſtone, with ſome neceſſary precautions, might be uſed for the purpoſe of intoxicating Bees. In this inhuman manner the heavieſt as well as the lighteſt hives are treated: the former, becauſe they yield the greateſt profit, with an immediate return; and the latter, becauſe the inſects would not be able to ſurvive the winter.

The practice of the ancients, however, with reſpect to the treatment of Bees, was very different: they were content to ſhare with theſe induſtrious inſects the produce of their labours; and ſome very laudable attempts have been made in this country to attain the deſirable end of ſecuring the wax and the honey without deſtroying the Bees. In 1665, John Geddy, Eſq. publiſhed his invention of boxes for preſerving the lives of Bees: theſe were improved by Dr. Warder; who embelliſhed his account of the ſtructure and uſe of theſe boxes with many curious circumſtances reſpecting the œconomy of Bees. In the ſame laudable track followed two very ingenious divines; viz. Mr. John Thorley, of Oxford; and Mr. Stephen White, of Holton, in Suffolk; who carried the method of preſerving the

lives of Bees to a ſtill higher degree of perfection. Mr. Wildman, likewiſe, ſo univerſally known and admired for his curious experiments on this tribe of inſects, has obliged the world with the following method, by which the wax and honey may be obtained without deſtroying the Bees.

'Remove,' ſays he, 'the hive from which you wiſh to take the wax and the honey, into a room conſiderably darkened, that it may at firſt appear to the Bees like the duſk of the evening. Gently invert the hive, placing it between the frames of a chair, or any other ſteady ſupport; and cover it with an empty hive, a little raiſed, to give the Bees ſufficient light to get into it. While you hold the empty hive, ſteadily ſupported on the edge of the full hive, between your ſide and your left-arm, keep ſtriking with your other hand all round the full hive from top to bottom, in the manner of beating a drum; ſo that the Bees may be frightened by the continual noiſe from all quarters; and, in conſequence thereof, they will mount out of the full hive into the empty one. Repeat the ſtrokes rather quick than ſtrong round the hive, till all the Bees have changed their abode, which will generally happen in about five minutes. It is to be obſerved, that the fuller the hive is, the ſooner the Bees will have left it. As ſoon as a number of them have got into the empty hive, it ſhould be raiſed a little from the full one, that the communication between them may not be ſtopped. When all the Bees have left the full hive, the other, in which they have taken ſhelter, ſhould be placed on the ſtand from which the former hive was taken, in order to receive the abſent Bees, as they return from the fields.

'If this be done early in the ſeaſon, the operator ſhould examine the royal cells; for if any of them contain young Bees, they muſt, as well as all the combs containing them, be ſaved in the hive. Take out the other combs with a long, broad, and pliant knife; cutting them from the ſides and crown as clean as poſſible, to ſave the future labours of the Bees, who muſt lick up the honey ſpilt, and remove every grain of wax: the ſides of the hive ſhould then be ſcraped with a table-ſpoon, in order to clear away what has been left by the knife. Thus, having ſeparated the wax and honey, let a table, covered with a clean cloth, be placed near the ſtand; and, giving the hive in which the Bees are contained a ſudden ſhake, ſtriking it at the ſame time pretty forcibly, the Bees will be ſhaken on the cloth. Put their own hive under them immediately, raiſed a little on one ſide, that the Bees may more eaſily enter; and, when all have recovered their original ſituation, place it on the ſtand, as before. If the hive in which the Bees are contained be turned uppermoſt, and their own hive placed over it, the Bees will immediately aſcend into it, eſpecially if the lower ſides be ſtruck, in order to alarm them: for the effects of fear impreſſed on the Bees by the continual noiſe, render them for a conſiderable time ſo mild and tractable, that they will bear any handling which does not ſenſibly hurt them, without any indications of reſentment.'

Though Bees are nearly alike in all parts of the world, there are ſome variations which a naturaliſt ought to obſerve. In Guadaloupe, they are leſs by one half than thoſe common to Europe, being blacker, as well as rounder: they have no ſtings; and they build their cells in hollow trees, where, if the holes they meet with are too large, they conſtruct a ſort of waxen-houſes, ſhaped like a pear, in which they lodge their ſtore, and depoſit their eggs. They place their honey in waxen veſſels of a deep black or violet colour, and about the ſize of pigeons eggs; and theſe are ſo united, that there is no ſpace left unoccupied. The honey never congeals, but remains always in a fluid ſtate, of the conſiſtence of oil, and the colour of amber.

In all the tropical climates there are found little black Bees without ſtings; and though theſe countries ſeem replete with Bees like our own, the former are the moſt uſeful and laborious tribes in that part of the world: the honey they produce is neither ſo unpalatable, nor ſo ſurfeiting, as ours; and the wax is ſo ſoft, that it is only uſed for medicinal purpoſes, never acquiring a conſiſtence ſufficient to be made into candles.

In every country of Europe, indeed, there are ſeveral tribes of inſects diſtinguiſhed by the names of Bees; which, however, differ very conſiderably from the ſocial and induſtrious race already deſcribed.

Bee, Humble. The largeſt of all this tribe is near three quarters of an inch long, and a third of an inch broad; the body, except the back-part about the vent, which is white, is black and hairy; and the fore-part inclines to a yellow. Theſe inſects are ſeen in every field, and perched on every flower. They build their neſts in holes of the ground with dry leaves intermixed with wax and wool, and defend themſelves from the inclemency of the weather with moſs. Each Humble Bee builds a ſeparate cell, about the ſize of a ſmall nutmeg, which is round and hollow, and contains the honey in a bag. Several of theſe cells are joined together in ſuch a manner as to give the whole the appearance of a cluſter of grapes. The females, which have the appearance of waſps, are but few, and depoſit their eggs in cells, which the reſt ſoon cover over with wax. It is uncertain whether this tribe has a queen; but there is one Bee much larger than the reſt, deſtitute of wings and hair, and all over black like poliſhed ebony: this female views all the works from time to time; and frequently enters into the cells, as if deſirous of knowing whether the buſineſs of the reſt of the Bees is properly tranſacted. In the morning, the young Humble Bees are very idle, and ſeem averſe to labour, till one of the largeſt thruſts half it's body from a hole deſigned for that purpoſe; and, being ſeated on the top of the neſt, beats it's wings for twenty minutes ſucceſſively, buzzing, without intermiſſion, till the whole colony is put in motion.

The Humble Bees collect honey, as well as the common ones; but it is neither ſo fine nor ſo good; nor is their wax ſo clean, or ſo capable of fuſion.

The green and yellow Bee is the moſt beautiful of this ſpecies. It is ſhaped like the common Bee, but is conſiderably ſmaller. The head and breaſt are of a fine bright blue colour, with an admixture of green; the body is of a beautiful gloſſy yellow, and looks as if gilt; the breaſt, and the laſt ſegment of the body but one, are dentated behind; and the feelers, which are black, are compoſed of twelve joints.

Bee, Wood. This ſpecies of Bee is ſomewhat larger than the female of the common ſort. Their bodies are of a very deep blue colour, ſmooth, and ſhining; their fore-wings are of a deep violet colour; on their ſides, the hinder-part of their bodies, and their breaſts, there are long black hairs; and their trunks reſemble thoſe of the common Bees.

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Though the Wood Bees are by no means numerous, there is ſcarcely a garden where ſome of them may not be found at different ſeaſons of the year. They make their firſt appearance at the cloſe of winter, when they are frequently ſeen flying near ſuch walls as are expoſed to the ſun. They generally form their neſts in pieces of half rotten wood: and the holes are not made directly forward, but inclining to one ſide, and having apertures large enough to admit the middle-finger; from which run their inner apartments, each generally twelve or fifteen inches long. Theſe cavities they bore with their teeth, and generally diverge them into three or four different rooms; in each of which they depoſit ten or twelve eggs, which are involved in a ſort of paſte, ſerving for the protection of the young animals, as well as for their nouriſhment. When they turn to worms, they are very white; the nymphs which proceed from them are of the ſame colour, but afterwards turn brown, and then blackiſh, by degrees. The females perform all the labour; and the males have no ſtings. Theſe Bees, when grown up, feed upon a ſort of lice of a reddiſh brown colour, each about the ſize of the head of a ſmall pin.

Bee, Mason. The Maſon Bees conſtruct their cells of a kind of mortar made of earth, againſt thoſe walls which are expoſed to the ſun. This mortar, which is at firſt ſoft, ſoon becomes as hard as ſtone; and the eggs being laid in this cement, undergo the ſame metamorphoſis as thoſe of the common Bees, each neſt or lodging conſiſting of ſeveral cells. Some of theſe Bees are red, and others black; but they are all nearly of the ſame ſize, being about the length of drones, though of inferior thickneſs.

The black Maſon Bees are armed with ſtings; but the red, being thoſe males which are exempted from labour, have none. The liquid of which this mortar is compoſed proceeds from their mouths, and ſerves to glue one particle of earth to another. Externally their neſts are rough, but internally they are extremely ſmooth. Each cell is about an inch in height, and near half an inch in diameter; and to theſe cells the females carry the food neceſſary for their young, which is a ſort of paſte like that of the wood Bees.

In general, a neſt conſiſts of ſeven or eight cells; but ſometimes of only three or four, one cell being placed over another. If the neſt wants but few repairs, the inſects make uſe of it the following year, and ſometimes three or four years ſucceſſively. They begin to build about the middle of April, and ſometimes find great difficulty in compleating their work by the end of June; and though, from the apparent ſtrength of their houſes, it might naturally be ſuppoſed that theſe Bees lodged in perfect ſecurity, no inſects whatever are more expoſed; for a kind of worm, with very ſtrong teeth, frequently inſinuates itſelf into their little fortifications, and devours the young.

There are many Bees of this ſpecies which, by making choice of ſheltered places, form their houſes with leſs durable materials than the former. They ſelect ſtones with holes in them large enough to admit their whole bodies; and when the apertures happen to be too wide, they ſtop up part of them with mortar, and make them exactly round. Theſe Bees are covered all over with a fine down, of two colours; that on their bodies being a kind of orange, while that on their breaſt-plates is quite black. Their trunks are ſmall, and formed like thoſe of the common Bees; but their teeth reſemble the blades of ſciſſars, except that they are ſerrated. They have two horns, or feelers, on the fore-part of their heads, which are inflexile. Their paſte is more liquid than that of the real Maſon Bees; and they always ſtop up the holes of their cells with the ſame ſort of earth which compoſes their neſts.

Bee, Ground. The Ground Bees build their neſts in the earth; making round holes five or ſix inches deep, the mouths of which are ſo narrow, as barely to admit their little inhabitants. It is, indeed, curious to obſerve the patience and aſſiduity with which theſe inſects labour: they carry out all the earth, grain by grain, to the mouths of their holes, where it forms a little hillock; an Alps, indeed, if compared with the magnitude of the artiſts by whom it is raiſed. Sometimes the walls of gardens are undermined by their labours; ſome of their holes running directly downward, and others horizontally beneath the ſurface. Like the former ſorts of Bees, they depoſit in thoſe cavities proviſions for their young; though of a very different nature, as they have the appearance of corn, and poſſeſs a ſaccharine taſte.

Some of the Ground Bees are not ſo large as ſmall houſe-flies; while others are equal in magnitude to the common Bees. Some of them are of an oblong ſhape, and others ſhort. Thoſe which form their neſts in the narrow walks of gardens are ſmall, but have the appearance of common Bees; while others are black, with wings of a deep violet colour, and a little whitiſh down or hair on the inſides of their thighs.

Bee-Fly. This inſect forms a ſpecies of itſelf, being of a middle nature between the common Bee and the fly. The trunk differs from that of the common Bee, the greateſt part of it being hid in a kind of ſhelly ſheath; and, when protruded, it is accompanied with a ſort of threads, four in number, but at other times it lies concealed beneath the teeth: under theſe threads there is a ſort of fleſhy prominence, the real tongue of the fly, with which it licks it's trunk. The body is longer than that of any other Bee; and the rings, which compoſe the trunk neareſt the breaſt-plate, are reddiſh on the ſuperior parts.

Theſe Flies have their neſts in the ground, nine or ten inches deep: and the females are armed with ſtings, but the males, which are diſtinguiſhed by their ſuperior magnitude, have none.

Bee, Leaf-Cutting. The Leaf-Cutting Bees build their neſts, as well as lay their eggs, among bits of leaves, very artificially placed in holes in the earth, of a finger's length. To theſe bits of leaves they give a cylindrical form; and with them they line the inſides of their habitations, and afterwards cover them with paſte of a reddiſh colour, which has ſomething of a ſweetiſh taſte a little inclining to acid.

Of theſe Bees there are ſeveral ſpecies, all diſtinguiſhed by one common character, that of being ſhort. Thoſe which build their neſts with the leaves of the cheſnut-tree are as big as drones; while thoſe which make uſe of roſe-tree leaves are ſmaller than the common Bees; and, through their downy coverings, their bodies appear ſemipellucid. The colour of the upper-part of their bodies is a browniſh black; except that on each ſide there is a tuft of hair almoſt white. The colour of the extremities of their bodies is a blackiſh brown, as well above as below; but the three rings next to them are covered, on the belly part, with long

long hairs of a cinnamon colour: and thoſe of the croſlet are brown. The ſpecies which ſhews a predilection for the leaves of the cheſnut, is red above, and of a whitiſh-grey underneath.

There are two or three more ſpecies of the Leaf-Cutting Bees; the trunks of all which are conſtructed like thoſe of the common Bees, except that they are covered above, as well as on the ſides, with a ſtrong ſhelly caſe, which ſerves to prevent the attrition of their trunks by the edges of the leaves while they are dividing them.

The males are ſomewhat leſs than the females, and more pointed behind; and, when preſſed by the fingers, ſix ſmall horns proceed from them, three on each ſide. Each of their teeth is terminated by a hook, ſharp at the end, and ſerrated on the ſides.

When the female of this ſpecies has finiſhed her neſt, ſhe fills it up with paſte, lays her egg, and then cloſes it up. When the egg is grown to a proper ſize, the inſect weaves a ſilken ſhell, which adheres to the ſides of the leaves: the exterior part of the ſilk is coarſe, and as brown as coffee; but the inſide is very fine and white, being ſmooth and ſhining like ſattin.

Bee, Wall. The Wall Bees make their neſts of a kind of ſilky membranes, with which they fill up the vacuities between the ſtones in walls. They conſiſt of ſeveral cells, placed end to end, in the ſhape of thimbles. Though the webs of theſe membranes are very cloſe, they are tranſparent, and of a whitiſh colour. It is ſuppoſed that the Bees ſpin theſe webs with a glutinous ſubſtance extracted from their bodies, almoſt in the ſame manner as ſilk-worms. They are rather leſs than common Bees; but, like them, have a croſlet of red hair; and the rings of their bodies are of a brown colour bordered with white hair. They reſemble the leaf-cutting Bees in ſhape; and their trunks are ſhort and thick, but largeſt at their extremities, and a little cloven: tranſverſe rays or ſtreaks are formed by ſhort hair on the upper parts, and a kind of longiſh hair borders the turn of the hollow ones. With reſpect to ſize, the males and females are exactly the ſame; but the former are deſtitute of ſtings. The feet of theſe Bees ſeem adapted for digging the earth; for they have two points, one at the end, and another ſomewhat ſhorter; forming together a kind of fork with unequal prongs.

Bee, Tapestry. The Tapeſtry Bees obtain their name from the circumſtance of their lining their neſts with a ſpecies of tapeſtry, collected from the flowers of the wild poppy when newly blown, bits of which they place at ſmall intervals from each other. They generally build their neſts by the ſides of highways and paths in corn-fields. They are ſhorter in proportion than the common Bees, but nearly of the ſame colour. Like ſeveral other ſpecies already mentioned, they fill their neſts with paſte for the nutrition of their young.

BEE-EATER. This bird is of the ſhape of a king's-fiſher, and about the ſize of a blackbird. The bill is like that of the halcyon tribe, except that it is a little more incurvated; and the feet are exactly like thoſe of the king's-fiſher. The tongue, which is ſlender, rough, and jagged towards the end, appears as if it were lacerated. The eyes, in ſome of theſe birds, are of a hazel colour, and in others of a beautiful red. The head is large and oblong; and the feathers at the baſe of the upper-chap are white, ſhaded with green and yellow. The back part of the head, in ſome, is of a deep red; and in others there is a mixture of green among it. From the corners of the bill, along each ſide of the head, runs a black ſtreak, which extends beyond the eyes; and near it, on the upper-part of the head, the feathers are of a pale yellow. The belly, neck, and breaſt, are of a blueiſh green; and the feathers on the ſhoulders, in ſome, are blue; on the under-wing, in others, green, with an admixture of red. The large wing-feathers are of a colour inclining to orange, with black tips, intermixed with ſome which are green. The tail is upwards of three inches in length; and conſiſts of about twelve feathers, the two middlemoſt being longer than the reſt, and terminating in ſharp points. The colour of the tail varies; being green in ſome, in others blue, and of a darkiſh brown underneath. This bird is a native of Bengal in the Eaſt Indies, and ſeveral other countries.

In the Eaſt, and particularly in Bengal, there is another ſpecies about the ſame ſize; with a black bill, thick at the baſe, bending downwards, and near two inches long. The eyes are of a fine red; and on each ſide of the head is a black ſtreak, which, beginning at the corner of the mouth, extends beyond the eyes; the baſe of the upper-chap, as well as that part which is under the chin, is covered with bright pale blue feathers; the upper part of the head, and the back and wings, are of a duſky yellow; the tips of the quill-feathers are brown; the breaſt and belly are green; and the under-part, near the vent, is of a pale yellow, with a ſmall mixture of green. The outermoſt feathers of the tail are variegated with green and yellow; the two middlemoſt feathers being twice as long as the reſt, and terminating in ſharp points of a brown colour. The legs and feet are like thoſe of the king's-fiſher.

Bee-Eater, Indian. This bird is only half the ſize of the European Bee-Eater, or the merops; and the middle feathers of it's tail are conſiderably longer. The bill is pretty long and ſharp-pointed, with a downward incurvation; the upper mandible is black or duſky, and the lower whitiſh at the baſe; the beginning of the forehead next the bill is blue, of which colour likewiſe are the throat and ſides of the head beneath the eyes; and the crown and hinder parts of the head and neck are of a red or orange colour. On the upper part of the breaſt there is a tranſverſe mark in the form of a creſcent, with the horns pointing upwards; the back, and leſſer covert feathers of the wings, are of a parrot-green colour; the rump, or coverts of the tail, are of a blueiſh green; the breaſt and belly are of a light green; the thighs are of a reddiſh brown; and the coverts beneath the tail are of a dirty green. The greater quills of the wings are duſky at their tips, having a little green on their edges towards the baſe; the centre quills are of an orange colour, bordered with green marked with black ſpots a little within their tips, the extreme tips being orange; the interior quills next the back are wholly green; the firſt row of coverts above the quills is orange in the centre, and green on the edges. The tail is green; the ſhafts of the feathers are brown; the two centre feathers project more than two inches beyond the reſt, are brown at the tips, and very narrow, being little more than the naked ſhafts; the under-ſide of the tail is of a duſky green; the legs are ſhort; the three forward toes are partly connected together; the claws are pretty ſtrong; and the legs and feet are of a duſky brown colour.

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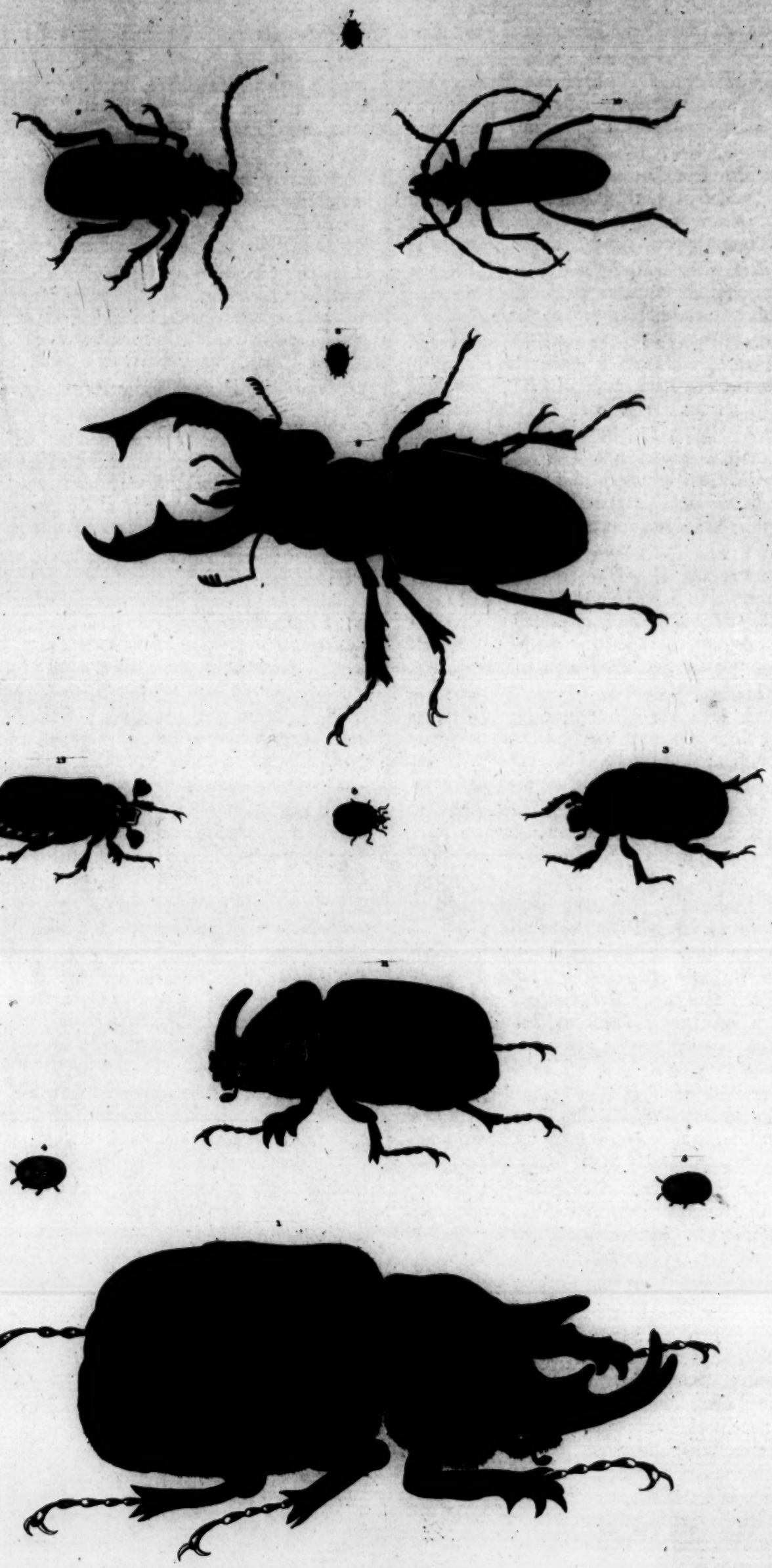

1. ELEPHANT BEETLE. 2. STAG BEETLE. 3. BRASS BEETLE. 4. GREEN TORTOISE BEETLE. 5. SHIELD BEETLE. 6. SEVEN-SPOTTED LADY COW BEETLE. 7. TWO SPOTTED LADY-COW BEETLE. 8. FOUR SPOTTED LADY-COW BETTLE 9. CAPRICORN BEETLE. 10. MUSK BEETLE. 11. UNICORN BEETLE. 12. DORR BEETLE OR CHAFER.

Plate. XCIV. Published as the Act directs by Harrison & Co. Jany 20 1787.

BEET-FLY. The name of a very ſmall fly which uſually frequents the leaves of the beet.

BEETLE. The Engliſh name for the ſcarabæus, a genus of inſects having two tranſparent wings, with caſes which cover them cloſe while at reſt, but which allow them their proper play when flying. Theſe inſects, like the reſt of the order, are all produced from eggs: they then become grubs; afterwards they are changed into chryſalides, in which ſtate the parts of the future animals are diſtinctly ſeen; and, laſtly, the Beetles, leaving their priſons, ſally forth as winged animals in full maturity.

The ſpecies of Beetles, properly ſo called, are extremely numerous: all of them, however, concur in one common formation of having caſes to their wings; which are the more neceſſary for theſe inſects, becauſe they often live under the ſurface of the earth in holes excavated by their own induſtry. Theſe caſes guard the real wings from the various injuries which they might otherwiſe ſuſtain by rubbing againſt the ſides of the abode of the Beetles; and, though they do not aſſiſt the inſects in their flight, they keep their internal wings clean and ſmooth; and from them that buzzing noiſe proceeds which is always heard when the animals aſcend into the air.

As in ſhell-fiſh, the bones of all animals of the Beetle kind are placed externally: and their muſcles, which are all internal, are formed very much like thoſe of quadrupeds; and, conſidering their ſize, are endued with ſurprizing ſtrength. The power derived from theſe muſcles is peculiarly ſerviceable to the inſects in digging their ſubterraneous abodes, where they are moſt uſually hatched, and to which they generally return, even after they have become winged inſects, and are capable of ranging the ſky.

The varieties of this genus ariſe not only from a difference of ſhape and colour, but alſo from their magnitudes; ſome Beetles being no larger than the head of a pin; while others are of the ſize of a man's fiſt. Their moſt eſſential difference, however, proceeds from the ſtages of their exiſtence; ſome being produced in a month, and in a ſingle ſeaſon undergoing all their transformations; while others require near four years to compleat their production, and live in a winged ſtate for a whole year after.

BEETLE, ELEPHANT. This is the largeſt ſpecies of the Beetle kind hitherto known; and is found in South America, particularly in Guiana and Surinam, as well as about the River Oroonoko. It is of a black colour; and it's whole body is covered with a very hard ſhell, quite as thick and as ſtrong as that of a ſmall crab; it's length, from the hinder part of the eyes, is almoſt four inches, and from that to the extremity of the proboſcis, or trunk, four inches and three quarters; the tranſverſe diameter of the body is two inches and a quarter; and the breadth of each elytron, or caſe for the wings, is an inch and three-tenths; the antennæ, or feelers, are quite horny; for which reaſon the proboſcis, or trunk, is moveable at it's inſertion into the head, and ſeems to ſupply the place of feelers; the horns are eight-tenths of an inch long, and terminate in points; the proboſcis is an inch and a quarter long, and turns upwards, making a crooked line terminating in two horns, each of which is near a quarter of an inch long, but they have no perforations, like the trunks of other inſects. About four-tenths of an inch above the head, or that ſide next the body, there is a prominence, or ſmall horn, which, if the reſt of the trunk were taken away, would cauſe this part to reſemble the horn of a rhinoceros; and the feet are all forked at the end.

BEETLE, RHINOCEROS. There are ſeveral varieties of this ſpecies; one of which, a native of the Eaſt Indies, is of a jet-black colour, and has a horn on it's noſe, which turns upwards; and about the middle of it's belly there is another horn, which ariſes from a tubercle, and turns inwards. The whole length of the body of the animal, from the extremity of the horn to the back-part, is four inches, and the breadth is almoſt two: it has alſo two horns behind the ſnout; and ſix feet, or legs, forked at the ends.

There is another Rhinoceros Beetle common about Vienna, in Germany. The horn has a ſtrong reſemblance to that of the rhinoceros, as it turns up, and is ſharp-pointed; it has a prominence behind the head; and, like the former, it has ſix feet. The whole body of this inſect, except the belly, which is of a deep red colour, is as black and ſhining as pitch.

A third and fourth variety of the Rhinoceros Beetles have almoſt the ſame ſhapes; except that the wings of the former exceed the caſes in length, while in the latter they are ſhorter. They appear as if covered over with a ſhining ink; and the horns on their heads are full of knots: their heads are of a greeniſh gold-colour; and their ſhoulders are red; but their bellies are purpliſh; and the caſes of their wings are of the ſame colour as their heads. Their feet and legs are of a dun colour; and the wings under the caſes are whitiſh.

BEETLE, STAG. This inſect is about an inch long, and half an inch broad; and has two horns without joints, but ramified like thoſe of a ſtag; from which peculiarity it receives it's name. It is furniſhed with nippers at the extremity of the ſnout, not much unlike the claws of lobſters, with which it can pinch ſmall objects. The eyes are hard, prominent, and whitiſh; and near them, on both ſides, there are two pair of feelers. One pair of theſe feelers are branched, and placed between the horns and the eyes, having each a joint, and forming nearly a right-angle: the other pair, which are ſtraight and flat, are placed in the centre of the forehead, having a tubercle at their extremities like the head of a nail. The animal has ſix feet, of which the foremoſt pair are longer and thicker than the reſt. This Beetle is of a duſky-brown colour, or rather blackiſh on the back, eſpecially near the caſes of the wings and breaſt; and the horns, which are ſometimes as red as coral, give the animal a very ſingular and beautiful appearance. It is common in Kent and Suſſex; and is ſometimes ſeen in other counties of England.

BEETLE with lunated, prominent, and dentated jaws, and a ſmooth breaſt. This inſect is about an inch long, and two-thirds of an inch broad; the thorax is ſmooth, convex, and black, without any prominencies, but a ſort of an edge; the caſes of the wings are ſmooth, and of a blackiſh-purple colour; and the jaws, which are in the form of a creſcent, are prominent and black, and have two teeth in each. It feeds on the decayed parts of the trunks of aſh trees, and burrows in the ground under their roots.

BEETLE, BRASS. This inſect, which is one of the larger ſpecies, has a ſhort, broad breaſt; it's ſhape is in general diſproportionably broad; the eyes are ſmall; the legs are long and ſlender; and

the whole body is of a fine ſhining green, with a ſlight mixture of yellow. It frequents gardens, but is rather ſcarce.

Beetle, with clavated feelers, and the caſes of the wings on the fore-part. This ſpecies, which is ſmall, has a black head and breaſt: the caſes of the wings are grey towards the top; but, in other parts, are of a duſky blackiſh brown, with tranſverſe ſtreaks of white. It feeds on the carcaſes of dead animals, and particularly of birds. Some naturaliſts call this ſpecies dermeſtes.

Beetle, Green Tortoise, with clavated annulated feelers. This animal has a ſmall oval body, convex on the back, and flat on the belly; the upper part conſiſts of the caſes of the wings and the ſhield; the feelers are of a pale colour, but ſomewhat deeper on their tops than elſewhere; the legs are of a pale brown; and a kind of a prominent ring runs round the caſes of the wings, which entirely cover the body. It feeds on mint, and other herbs; and is common in moſt gardens. Linnæus calls Beetles of this kind caſſida, from their ſhields.

Beetle, Shield, or Black Cassida, with briſtly feelers, and a roundiſh body. This Beetle, which is of a duſky black colour, is frequently found in houſes, where it is ſometimes very miſchievous, eating holes in woollen-cloths and ſtuffs. The caſes of the wings are oblong, and lightly ſtreaked with ſeveral very ſmall concave ſpots; the ſhield is roundiſh, rough on the upper part, with a cruciated prominent edge; ſometimes two ſpots appear on the ſide towards the hinder part, covered with yellow hairs; and the belly is blackiſh. Whenever this inſect is touched, it draws up it's head and wings under it's body.

Beetle, Shield; or, Oval Pale Clouded Cassida, with an undivided ſhield covering the head. This inſect is very ſmall; it's body is of an oval ſhape, and of a pale brown colour, ſpotted and clouded all over with one of a more duſky hue, which gives it a diſtant reſemblance to a tortoiſe-ſhell: it's ſhield, which is ſhaped like a creſcent, is of a pale colour, without ſpots; the caſes of it's wings are ſtreaked and ſpeckled, the ſtreaks running in crooked lines; it's body is black; and it's feelers are black and ſlender. Beds of baum or mint are the common haunts of this inſect.

Beetle, Lady-Cow, with reddiſh caſes for the wings, and ſeven black ſpots on them. This beautiful and well-known inſect has a black head, with two white ſpots on the forehead; and a black breaſt, which is whitiſh near the margin: the caſes of it's wings are of an orange colour; and towards the baſe of each there are three black ſpots, and one which is common to both. The feelers of this inſect are ſmall and clavated; and it's under-part is wholly black.

Beetle, Lady-Cow, with red caſes for the wings, and two black ſpots on them. This ſpecies has a black breaſt, excepting that there is one large ſpot on it's edge, and two very minute ones near the baſe, and alſo two others of the ſame ſize at the inſertion of the feelers; the belly, feelers, and legs, being black. This Beetle is commonly found on alder-trees.

Beetle, Lady-Cow, with black caſes for the wings, and four red ſpots on them. The breaſts of this ſpecies are entirely black, and the ſpots on the caſes of their wings are of a blood-red colour, thoſe neareſt the breaſt being the largeſt. Theſe inſects live on maple-trees in the north of England; but are ſometimes ſeen, though ſeldom, in the hedges near London.

Beetle, Flying, of the Weſt Indies. This ſpecies, called acudia by the natives, has a luminous appearance, and is almoſt as big as a wren. It has four ſhining ſpots; two of which are placed near the eyes, and two under the wings.

Beetle, American Ball. This Beetle, to which the Americans give the appellation of tumble-dung, is an exceedingly curious inſect. It is wholly of a duſky black colour, but rounder than the generality of thoſe animals; and, though not much larger than the common black Beetle, is ſo very powerful, that if placed under a large braſs candleſtick, it will occaſion it's moving backwards and forwards, as if agitated by an inviſible hand, to the great admiration of thoſe who are unaccuſtomed to the ſight. But ſuch amazing ſtrength ſeems to be imparted to the inſect for a more valuable purpoſe than that of exciting human curioſity; for there is hardly any animal more induſtrious, either in providing the means of ſubſiſtence, or a ſecure retreat for it's young. It is enabled to diſcover it's proper food, the excrements of men or beaſts, by means of it's exquiſite ſenſe of ſmelling; on which it inſtantly drops, and begins to form round balls or pellets of the ordure, depoſiting an egg in the centre of each. About the month of September, it buries theſe pellets three feet deep in the earth, where they continue till the approach of ſpring; when the eggs are hatched, the neſts burſt, and the inſects make their way from their ſubterraneous retreats. They indefatigably aſſiſt each other in rolling theſe globular pellets to the place where they are to be buried; and this they perform with a retrograde motion, raiſing up their hinder-parts, and ſhoving along the balls with their hind-feet. They are always accompanied by Beetles of a larger ſize than themſelves, and of a more elegant ſtructure and colour, whoſe breaſts are covered with ſhields of a crimſon colour, and ſhining like metal; their heads are of the ſame colour mixed with green, and furniſhed with gloſſy black horns, bent backwards: they are called the kings of the Beetles; but for what reaſon is uncertain, as they are employed in the ſame filthy labour as their companions.

Beetle, Capricorn, or Goat-Chafer. This ſpecies is about the ſize of the ſtag Beetle, and of the ſame colour. The head is broadiſh; the eyes are large; the mouth, which is wide and forked, contains two exceedingly hard crooked teeth, with which it gnaws wood, making a noiſe like the grunting of a pig; the ſhoulders appear as if they were carved, and have hafts of the colour and poliſh of ebony; and the animal has ſix legs, three of which are furniſhed with joints ſo very weak, that they bend with the weight of the body. It has two horns growing above the eyes, conſiſting of ten flexible joints, not exactly round, but rough like thoſe of a goat, and longer than it's whole body: theſe horns are moveable in any direction at the pleaſure of the inſect, except that, in the act of flying, they are thruſt directly forward; and, when it is weary, they are uſed inſtead of feet. This Beetle, when at reſt, generally ſuſpends it's body from the branch of a tree by means of it's horns or feelers.

Beetle, Large Green Capricorn, muſk-ſcented. This is a moſt beautiful inſect, it's whole body being of a gloſſy blue-green colour, with a caſt of a ſhining gold-yellow. The wings under the caſes are black; the legs are of a blueiſh green hue; the breaſt is pointed at each extremity; and between theſe points there are three ſmall tubercles near the wings, and three ſtill ſmaller towards the head. The caſes of the wings are oblong, and

ſomewhat

ſomewhat like a lance, with three ribs a little elevated, and running lengthwiſe; the feelers are nearly of the ſame length with the body, and are compoſed of many ſmall joints, decreaſing in ſize towards the ends. This Beetle frequents willow-trees, and has a ſort of muſky ſmell.

Beetle, Russian Capricorn, with very long horns. This Beetle is about three quarters of an inch long, and wholly grey. The caſes of the wings, which are blunt, are covered with many ſmall hairs, among which ſeveral ſmall tubercles are interſperſed; a duſky ſhade runs acroſs the wings, which at the hinder part has an inclination to the centre; the breaſt is pointed at each end, and has four beautiful yellow ſpots towards it's hinder part; the eyes are black; and near the feelers, which are five times the length of the body, there is a black ſpot. Theſe feelers are grey, and conſiſt of ten joints, which ſhorten as they approach the head; and the wings are black, ſtreaked with brown. This inſect is found among old wood, but ſeldom in this climate.

Beetle, Black Capricorn, with a hairy grey breaſt. The body of this inſect, which is oblong, and ſomewhat depreſſed, is of a black colour, with a ſlight mixture of grey, and covered with many ſhort hairs, having prominent tubercles between them; the breaſt is hairy and black, though the white hairs give it a greyiſh appearance; and on the hinder parts are two ſmooth prominent ſpots; the feelers are ſlender and black, and about half the length of the body; and there is an undulated line on the caſe of the wings, but ſo faint as to be ſcarcely perceptible. This Beetle lodges among timber, but is not very common in England.

Beetle, Unicorn. There are ſeveral varieties of this ſpecies: which, however, may be placed under two diviſions; the firſt having ſharp protuberances in the breaſt, and the other none. Of the firſt diviſion, beſides thoſe already deſcribed, are the black Unicorn Beetle; the reddiſh Unicorn Beetle; the black Unicorn Beetle, with irregular pale ſpots on the caſes of the wings; the grey Unicorn Beetle ſpotted with black; the grey Unicorn Beetle with black caſes to the wings, ſpotted with white; the grey and black Unicorn Beetle; the grey capricorn Beetle; and the ſhelly capricorn Beetle.

Of the ſecond diviſion, or ſuch as are deſtitute of protuberances, are, the black capricorn Beetle; the ſhelly capricorn Beetle; the ſhelly capricorn Beetle, with a ſmooth breaſt; the brown capricorn Beetle; the grey capricorn Beetle; the black capricorn Beetle, with a longitudinal dentated line and yellow ſpots on the caſes of the wings; and the ſhining violet-coloured capricorn Beetle.

Beetle, Violet Black Dung, called by Ray the greater Beetle. This animal has an oblong body, of a purpliſh black colour; a ſmall head; large prominent eyes; and long and very ſlender feelers. I'ts general colour is black, except that the edges of the breaſt and wings are of a beautiful deep gloſſy purple; the caſes of the wings have neither dots nor lines, but only a kind of wrinkles running lengthwiſe, and croſſed by others which are ſcarcely perceptible. This Beetle frequents dung-hills and putrid vegetables.

Beetle, Purplish Black Dunghill. This ſpecies is of the large kind; the general colour is blackiſh, with a ſtrong and very fine tinge of gloſſy purple; the body is of an oblong ſhape, and pretty thick; the caſes of the wings are marked with three lines, each of which is formed by a row of about twelve longitudinal concave yellow ſpots, and the lines between them are hollowed. It is generally found in dunghills, and amongſt various putrid ſubſtances.

Beetle, Dunghill, Black, with reddiſh legs. This ſpecies is ſcarcely larger than a common fly; the colour of the body is black; the breaſt is broad and ſhort; the caſes of the wings are ſtreaked with eight lines; and the legs and baſes of the feelers are of a reddiſh brown. Some naturaliſts give this inſect the name of the burn-cow, or burſt-cow, with a black body and red legs.

Beetle, Small Gilded. This very beautiful inſect, which frequents the banks of rivers, is of a fine gloſſy colour, reſembling a yellow metal, with a little mixture of green. The eyes are black and prominent; the breaſt is narrow, and rounded; and the caſes of the wings are adorned with many broad hollow ſpecks, each of which has a prominent point in it's centre: theſe hollow ſpecks, which are arranged in rows, are of a deep-black colour; but their baſes are of a fine metalline yellow.

Beetle, Burn-Cow, or Burst-Cow. This inſect has filiform feelers; and it's head, which is half hid within it's breaſt, is of a roundiſh ſhape. Of this ſpecies there are ſeveral varieties; viz. the yellowiſh green Burn-Cow, the yellowiſh black Burn-Cow, the browniſh braſſy Burn-Cow, the braſſy and clouded Burn-Cow with clavated feelers, and the Virginian Burn-Cow. Theſe varieties differ from each other more in their magnitude and colour than in any particular conformations or habits: they are very troubleſome to cattle; and chiefly frequent the banks of rivers, or other places where reeds abound.

Beetle, Dorr; or May-Bug, as it is called in ſome parts of England. This inſect is one of the moſt curious, as well as moſt numerous, of all the Beetle tribe. Like the other ſpecies, it is furniſhed with caſes to it's wings, of a reddiſh brown colour, ſprinkled with a whitiſh duſt, which is eaſily rubbed off. At ſome ſeaſons, it's neck appears with a red plate; and, at others, with a black one: theſe, however, are diſtinct ſorts, and the variation is by no means accidental. The fore-legs, which are very ſhort, are calculated for burrowing in the ground, where this inſect forms it's retreat. Theſe Beetles are very formidable to huſbandmen; for, at ſome ſeaſons, they have been known to ſwarm in ſuch numbers, as to conſume every vegetable production. The two ſexes in the Dorr are eaſily diſtinguiſhed from each other by the ſuperior length of the tufts at the extremities of the horns in the male. They begin to copulate in ſummer, when they are obſerved together for a conſiderable time. The female, after being impregnated, quickly begins burrowing in the ground, in order to depoſit her burden. She makes a hole about half a foot deep, in which ſhe places her eggs, which are of an oblong ſhape, with great regularity. When ſhe has laid her whole quantity, ſhe again aſcends from her hole, and returns to her former way of life, finding ſubſiſtence on leaves and vegetables; and generally lies hid during the heat of the day among the branches of trees, hardly ever venturing abroad till the duſk of the evening.

The eggs having laid about three months in the ground, the incloſed inſect begins to burſt it's ſhell; and a ſmall grub or maggot crawls forth, and feeds upon the roots of the neareſt vegetables. All ſubſtances of this kind ſeem equally grateful to the animal; though it is probable that the mother-

ther-inſect chuſes what kinds of vegetables ſhe thinks proper, among which to depoſit her young.

In this ſtate theſe voracious creatures continue for more than three years, devouring the roots of every plant they approach, and making their way under-ground, in queſt of food, with great diſpatch and facility. At length they grow to above the ſize of walnuts; being large, thick, and white maggots, with red heads, and moſt commonly diſcovered in new-turned earth, and which is eagerly ſought after by birds of every ſpecies. When they have attained their full proportions in the maggot ſtate, they are about an inch and a half long, their bodies being compoſed of twelve ſegments or joints, on each ſide of which are nine breathing-holes, and three red feet. Their heads are large in proportion to their bodies, and of a reddiſh colour, with pincers before, and ſemi-circular lips, with which they cut the roots of plants, and extract their moiſture. As the inſects, while in this ſtate, live continually under ground, they have no occaſion for eyes, and accordingly nature has not provided them with any; but they are furniſhed with two feelers, which ſerve to direct their motions.

About the end of the fourth year, the Beetle Dorr prepares to emerge from it's ſubterraneous abode; and, at the latter end of autumn, the grub, beginning to perceive the approach of it's tranſformation, buries itſelf deeper and deeper in the earth, ſometimes ſix feet beneath the ſurface; and there forms itſelf a capacious apartment, the walls of which, from the excretions of it's body, are rendered very ſmooth and ſhining. It's abode being thus formed, it ſoon begins to ſhorten itſelf, to ſwell, and to burſt it's laſt ſkin, in order to aſſume the form of a chryſalis, which at firſt appears of a yellowiſh colour; but, being heightened by degrees, at laſt becomes nearly red. It's external form now plainly diſcovers all the veſtiges of the future winged inſect, it's fore-parts being diſtinctly ſeen; while the animal, when viewed behind, appears as if wrapped up in ſwaddling-cloaths.

In this ſtate the young Dorr continues for about three months longer; but the aurelia does not diveſt itſelf of all it's impediments, and become a perfect winged inſect, till the beginning of January. Still, however, the animal is far from attaining it's natural ſtrength, health, and appetite: it undergoes a kind of infantine imbecillity; and, unlike moſt other inſects, which the inſtant they become flies have gained their full maturity, the Dorr continues for ſome time feeble and ſickly; it's colour is much brighter than in the perfect animal; all it's parts are ſoft; and it's voracious nature ſeems for a while entirely ſuſpended. As the animal is very often found in this ſtate, it is erroneouſly ſuppoſed by thoſe who are unacquainted with it's genuine hiſtory, that the old ones of the former ſeaſon have interred themſelves for the winter, in order to reviſit the ſun the enſuing ſummer: but the fact is, the old ones never ſurvive the ſeaſon after they have become denizens of the ſky; but, like all the other winged tribes of inſects, die through cold.

The Dorr, after having lived near four years in it's imperfect ſtate, generally burſts from it's ſubterraneous abode during ſome mild evening about the latter end of May; when an attentive obſerver may ſee numbers of theſe inſects iſſuing up before him in his pathway in a very curious and attracting manner, even perforating the hardeſt parts of the earth by their egreſſion: and, when the ſeaſon is very favourable, they are ſeen in myriads, buzzing along, and ſtriking againſt every object which intercepts their flight. The mid-day ſun, however, ſeems too powerful for their conſtitutions; for they then lurk under the leaves and branches of ſhady trees: the willow ſeems to be their moſt favourite food; and on it they ſettle in cluſters, and ſeldom quit it till they have conſumed all the verdure. In the evenings of thoſe ſeaſons which are moſt favourable to their propagation, they appear in incredible numbers; their continuance, however, is but ſhort, as they have many formidable enemies to encounter, and the firſt ſevere weather totally annihilates them.

They begin to copulate ſoon after they are emancipated from their priſons. The Dorrs, in their winged ſtate, ſeem much leſs noxious to vegetation than when in their imperfect one. In the latter, however, they ſometimes deſtroy not only the verdure, but the very roots of plants; and, if the feathered tribe did not unanimouſly conſpire to devour them, they would be fatal to agriculture, and probably occaſion frequent famines.

Beetle, Water. Theſe Beetles generally have feelers like briſtles; and feet adapted for ſwimming, being a little bearded like an ear of corn; theſe feet are ſix in number, the hinder of which are longeſt and broadeſt. They ſeldom fly abroad in the day time; but, like the Beetle tribe in general, ſhew a predilection for the night.

Beetle, Great Water. This inſect is an inch and a half long; it is entirely of a deep and ſomewhat gloſſy black; the eyes are pretty large; the feelers are ſhort; the caſes of the wings are ſmooth on the ſurface, under which the wings have a tincture of a ſilver colour; and the body gradually decreaſes in ſize, till it terminates in a point. It is very common in ponds and ditches, and riots on the more feeble aquatic inſects.

Beetle, Black Water, with the caſes of the wings yellow on the edges. This ſpecies is about the ſame ſize as the Great Water Beetle, but the head is ſmall in proportion to the body. The eyes are large; the legs are ſtrong and robuſt; the edges of the caſes of the wings are very prominent, eſpecially about the middle, where they are of a yellow colour; but every other part is black. It is common in rivers and brooks.

Beetle, Goggle-Eyed Water. This ſpecies is ſomewhat leſs than that laſt deſcribed; the head, however, is very large, and the eyes are remarkably prominent; the caſes of the wings are marked with ten ſtreaks, which are diſcontinued before they run the whole length; and the colour is wholly of a blackiſh brown.

Beetle, Grey Water. This inſect is about the ſize of the blue fleſh-fly; it's breaſt is yellow in the middle, but black at the top and bottom; the caſes of the wings are of a greyiſh colour, marked with a great number of yellowiſh ſhining ſpecks, which at the edges become entirely yellow; there is alſo a yellow ſpot, in the ſhape of a heart, with black edges, on the top; and the point of the breaſt is obtuſe, though ſlightly forked.

Linnæus mentions a Water Beetle with perfoliated feelers; that with dilated ſides; the common Water Beetle; and the Water-flea. Theſe laſt are remarkable for ſkipping up and down on the ſurface of the water, as if they were at play; but, when the water is troubled, they ſink to the bottom, or conceal themſelves in the holes of the banks.

The other ſpecies are, the Water Beetle with a yellow

yellow breaſt; that with brown wings and a black belly; the Water Beetle with a round body, marked with ten ſtreaks on the caſes of the wings; the oval-bodied Water Beetle, with the caſes of the wings and the breaſt black, and the head and legs reddiſh; and the brown oval Water Beetle, with reddiſh legs, head and breaſt.

Beetle, Stinking. This ſpecies obtains the name of tenebrio among naturaliſts, from the circumſtance of it's hating the light. It is a pretty large inſect, entirely of a coal-black colour; the legs and thighs are ſlender; and the feelers are compoſed of pretty long joints, except the laſt, which is roundiſh: the breaſt has a rim on it, and is marked with ſmall ſpots. The animal walks very ſlowly; and, during the day-time, conceals itſelf in the deep holes of dunghills. It has a nauſeous filthy ſmell, which even affects thoſe places where it is found; and it ſeems to be of a very ſolitary nature, as two of them are ſeldom diſcovered together.

Beetle, Tenebrio Black; with the caſes of the wings rounded behind. This is a pretty large animal; the back is ſlightly prominent; the head is ſmall; the legs are long; it is entirely of a fine deep-black colour, with a purpliſh caſt; and is frequently found in the hot-beds of gardens.

Beetle, Tenebrio Black; with prominent jaws. This inſect is very little larger than the common fly; it's colour is a deep dull black; it's legs are long; and it's feelers are pretty long and ſlender. It is commonly found on the half-rotten branches of trees.

Linnæus informs us, that this inſect is furniſhed with ſmall filiform feelers; and that the ſuperior part of the body, which appears like caſes of wings, is cloſely connected, the animal being entirely deſtitute of wings.

Beetle, Oil. This inſect is called the proſcarabæus by Linnæus and Mouſet. It is diſtinguiſhed by having a ſoft body, of a duſky blue colour, with a ſhining blackiſh caſt: it has two wings, or rather the rudiments of wings, on the ſhoulders, which this inſect uſes much after the manner of the oſtrich, to aſſiſt it in running, and not in flying. The circles which ſurround the backs and bellies of the young Oil Beetles are greeniſh; but thoſe of the more adult are blue; and, on the ſlighteſt motion or touch, it emits a kind of oil, not very diſſimilar to liquid honey.

Mouſet informs us, that this inſect makes it's appearance only in May, or the beginning of June. Linnæus affirms, that it's feelers are like ſmall threads; that it has no wings; but that it is furniſhed with a ſort of caſes, about half the length of thoſe members in others of the Beetle kind.

Beetle, Mill. This inſect has feelers like briſtles, two horns on the tail, membranous caſes to the wings, and a roundiſh and ſomewhat compreſſed marginated breaſt. It is of a deep iron-colour, approaching to black; the ſhield, which lies over the breaſt, is plain and oval; and the caſes of the wings are alſo of an oval ſhape, but ſomewhat ſhorter than the body, and a little tranſparent: there are three ſtreaks upon each, the middlemoſt of which is raiſed, and the more inward hollow and compreſſed. On the tail there are two prickly feelers; and the legs are alſo prickly. The female has only the rudiments of wings, and their caſes. This inſect, which never appears during the day-time, is very common in mills, and the houſes of bakers. Linnæus calls it the blatto.

To theſe ſpecies of Beetles already deſcribed, ſeveral others might be added which are referred to this genus; but they differ conſiderably in many particulars of their conformation, and totally in their names.

BEEVE, SIBERIAN. This animal, which is of the cow-kind, is found in the country from which it receives it's name; and particularly in the vicinity of the Lake Baykal. The male has neither horns nor mane, but only rough curled hair on the top of it's head; and it's tail is like that of a horſe: it's whole body, except it's legs and face, is covered with long ſtraight hair; ſo that it bears but a very diſtant reſemblance to the common ſpecies of neat cattle.

Beeve Hog. This animal, which ſeems to be of a middle nature between a Beeve and a Hog, is of the height of an aſs, but broader and thicker; it is of a whitiſh dun or cream-colour; the hair on the body is extremely thin, and rather reſembles that of a hog than a cow: from the neck to the tail there is a row of briſtles down the ſpine of the back, but not ſo ſtrong as thoſe of a hog; the tail is terminated with ſtiff briſtles, and appears very much like that of an aſs; the head is very long; the ſnout, though approaching to that of the cow-kind, has a little ſimilitude to the ſnout of the hog; on the head there are two black flattiſh horns, bending inwards like a bow, and lying pretty cloſe to the neck; it has no udder like a cow; but between the hind-legs there are two ſmall teats which grow cloſe to the body.

This very ſingular animal has been hitherto little noticed by naturaliſts. One of them was publicly exhibited in England a few years ago; and though it's owners pretended that it came from the Eaſt Indies, and that it's proper name was the bonaſus, it was very unlike that animal.

BEEVES. A general name for oxen.

BEHEMOTH. A vaſt animal mentioned in the ſacred writings, about which interpreters are extremely divided.

BEISSKER. A name applied by Geſner, and ſome other naturaliſts, to the fiſh commonly called muſtela foſſilis, a ſpecies of the cobitis, diſtinguiſhed by Artedi by the name of the blueiſh cobitis with fine black longitudinal lines on each ſide. Schonefeldt calls it the pœcilia; and Johnſon, the piſcis foſſilis.

BELAVE. A name given by ſome of the ancient naturaliſts to the acus Oppiani; in Engliſh, the horn or gar-fiſh.

BELENNUS. A ſmall anguilliform ſea-fiſh, called by ſome naturaliſts blennis. It's figure approaches nearly to that of the Engliſh bull-head, or miller's-thumb; and is a very ſcarce ſpecies.

BELL-ANIMAL. A name given by writers on microſcopical diſcoveries to a minute animal found at the roots of the common duck-weed. It's body bears ſome reſemblance to a bell; and it is furniſhed with a very long and ſlender tail, by which it affixes itſelf to the roots of theſe little plants. Theſe animals are uſually found in cluſters, or bunches; thoſe of the ſame bunch have always a ſimilar motion, very frequently contracting themſelves, and afterwards expanding to the full length of their tails.

BELL-POLYPE. A particular ſpecies of polypus, the extremities of whoſe ramifications reſemble bells.

BELLICULI; or, BELLIRICI MARINI. A ſpecies of ſea-ſhells of an umbilical figure; ſome-

times of a white colour variegated with yellow; and, at others, of a yellow ſtreaked with black lines, after the manner of ſnails.

BELLOWS-FISH. This animal, to which ſome naturaliſts give the name of the trumpet-fiſh, is about four inches long, and an inch and a half broad; it is covered with rough ſcales, and has a long ſnout almoſt equal to a third part of it's whole body; the eyes are large, and their irides white; and on the back riſes a very ſtrong ſpine of a great length, to which there is a correſpondent furrow on the back part.

BELLUÆ. The ſixth order of the mammalia; the characters of which are, that their fore-teeth are obtuſely truncated, their feet hooſed, their walk heavy, and their food vegetables. The genera of the horſe, hippopotamus, hog, and rhinoceros, belong to this order.

BELUGA. A large fiſh of the ſturgeon kind, called by Artedi accipenſer tuberculis carens. This fiſh greatly reſembles the ſturgeon in ſhape, except that it's ſnout is ſhorter and thicker; and from it's roe or ſpawn that delicious compoſition called caviar is made. In the Wolga, this fiſh is very common, as well as very large; particularly near the city of Aſtracan, where ſome Belugæ have been caught meaſuring thirty-ſix feet in length and eighteen in circumference, and have yielded two hundred weight of caviar. It is alſo found in the Don and other rivers; and likewiſe in the Baltic and Caſpian ſeas.

This fiſh is farther remarkable for producing a calculus, or ſtone, called the Beluga ſtone, which is found in both ſexes, but moſt commonly in the male: however, it is far from being common; for in a thouſand fiſhes there is not ſometimes found a ſingle ſtone. In what part of the fiſh this ſtone is ſituated, is uncertain; but it is very evident that it is no natural part of the animal, but only a morbid concretion, like the bezoar ſtone, in the animal which produces them, or the calculus in human bladders. This ſtone is of various ſhapes and ſizes, which is probably owing to it's ſituation, as well as to other external cauſes; but it is uſually either globular or oval: it is of a yellowiſh white colour; of a ſmooth and naturally-poliſhed ſurface; generally from the ſize of a pigeon's egg to that of a gooſe; uſually compact, ponderous, and ſolid; not friable, but requiring conſiderable ſtrength to break it; and alſo eaſily yields to the ſaw, though this inſtrument defaces it's internal texture, which is naturally very elegant and regular. The Beluga ſtone conſiſts of ſeveral concentric coats, firmly adhering to each other, and incloſing a nucleus, which generally appears to be ſome heterogeneous ſubſtance. Being compoſed of regular and even ſtriæ, running from the centre to the circumference, and repreſenting, both in colour and form, the flakes of the terra foliata tartari, or the ſtriated ſpiculæ of antimony; it is, on theſe accounts, very different from all other ſtones of the kind.

If the Beluga ſtone be ſcraped to a powder, and ſprinkled on hot iron, it emits a faint urinous ſmell, and calcines into a light, inſipid, greyiſh earth. The natives on the banks of the Wolga eſteem it very highly for it's many ſalutary qualities, particularly that of promoting delivery; and by them it is conſtantly preſcribed in caſes of the ſtone and diſorders of the urinary parts.

BELULA BOS. A name given by Paulus Jovius to that ſpecies of the ray-fiſh called by the ancient Greek and Roman writers bos marinus; and, by the moderns, raia oxyrynchus; and is diſtinguiſhed by Artedi under the name of the variegated ray with ten prickly tubercles on the middle of the back.

BELSEBUL. A ſpecies of the ſimia, with a bearded black tail.

BEMETRE. A name given by the Brazilian Portugueſe to a greeniſh black-bird of the ſtarling kind, which is very common in that country, and called by the natives pitangua-guacu.

BENLOIA. A name by which the Swedes diſtinguiſh that ſpecies of the cyprinus which we call the bleak; and is the alburnus of naturaliſts.

BENNET-FISH. This fiſh is a native of the African ſeas, and is frequently caught near the Cape of Good Hope: it is nearly as long and thick as a man's arm; and weighs from ſix to eight pounds. It makes a very beautiful appearance, having large ſcales of a deep purple colour, ſtreaked with gold; the eyes are red; the mouth is ſmall, and without teeth; near the gills there are two fins of a gold-colour; the tail is red, and looks like a pair of ſciſſars when opened; the ſcales are tranſparent, the ſkin, when they are removed, appearing of a fine ſhining purple colour; the fleſh is red, and divided into flakes by a ſort of membrane; and, though ſomewhat dry and hard, it is nevertheleſs well-taſted, and eaſily digeſted.

BERFISCH. A German name for the common perca, or perch.

BERGANDER. An appellation given by ſome naturaliſts to the ſhell-drake, or burrough-duck, a very beautiful ſpecies of that fowl common on the coaſts of Lancaſhire; but it's fleſh is by no means palatable.

BERLUCCIO. A ſmall bird of the hortolanus kind, ſtrongly reſembling the yellow-hammer, but ſomewhat ſmaller and longer-bodied.

BEROE. A marine animal found on the Britiſh coaſts, of a gelatinous, tranſparent nature, and of an oval or ſpherical form, from half an inch to an inch in diameter, divided like a melon into longitudinal ribs, each furniſhed with rows of minute fins, by means of which this creature, like the animalia infuſoria, can ſwim in all directions with great facility.

Linnæus has joined the Beroe to the volvox, one of the animalia infuſoria.

BERUS. A ſpecies of the coluber.

BEZOAR GOAT. An animal found in Aſia Minor, and ſeveral other countries; to which Buffon gives the appellation of the paſan, and makes it a ſpecies of garelle. It has ſmooth black horns, ſharply ridged on their upper parts, and hollowed on their exterior ſides; theſe horns, which are cloſe at their baſes, are about a foot diſtant in their wideſt parts, and their length is about three feet: on the chin there is a large duſky beard, mixed with cheſnut; the fore-part of the head is black, the ſides being mixed with brown; and the reſt of the animal is grey, or grey mixed with ferruginous. From the neck to the tail, along the ridge of the back, there is a black liſt; and the tail is likewiſe black.

Though this animal, in form and agility, reſembles the ſtag, Monardus compares it to the he-goat; and aſſerts that it's feet are the ſame with thoſe of the goat.

The Bezoar Goat is one of thoſe animals which yields that once valued alexipharmic the Bezoar-ſtone, a concretion formed of many coats encruſting a nucleus of heterogeneous matter found in the

the ſtomach and inteſtines. The word Bezoar is ſuppoſed to derive it's name either from the paſan, or paſar, the animal which produces it; or from a word in the Arabic language ſignifying an Anti-dote or Counter-poiſon.

The Bezoar-ſtone is generally from the ſize of an acorn to that of a pigeon's egg; and the larger the ſtone, the more valuable it is eſteemed, it's price increaſing like that of a diamond. A ſtone weighing four ounces was formerly ſold in Europe for two hundred pounds; but, at preſent, theſe ſtones being of little eſtimation, the price has of courſe greatly fallen.

The Bezoar is of various colours; ſometimes of a blood-colour; ſometimes of a pale yellow; and, at other times, of all the ſhades between the above two colours: it is generally ſmooth and gloſſy; and has a fragrant ſmell, like that of ambergris, probably ariſing from the aromatic vegetables on which the animal feeds which produces it. It has been preſcribed in vertigoes, epilepſies, palpitations, the colic, the jaundice, and, in ſhort, in almoſt every diſorder incident to humanity: in all of which, perhaps, it is alike efficacious, acting only as an abſorbent, and poſſeſſing virtues equal to thoſe of common chalk, or crabs-claws. Judicious phyſicians have therefore diſcarded it; and the uſe of this once-celebrated medicine is now chiefly confined to thoſe countries where the knowledge of nature hath as yet made but little progreſs.

When this medicine was in it's higheſt reputation, many arts were practiſed to adulterate it, and many countries endeavoured to diſcover a Bezoar of their own; thus we had occidental as well as oriental Bezoar, cow Bezoar, hog Bezoar, and monkey Bezoar: in ſhort, there is ſcarcely an animal of the frugivorous kind which does not produce ſome of theſe concretions; and probably thoſe of one creature are equally as efficacious as thoſe of another.

BEZOLA. A truttaceous fiſh of the albula kind, called by Geſner the albula cærulea. It reſembles the herring in ſhape; and is of a duſky blueiſh colour, not differing very eſſentially from the lavaretus.

BIB. This fiſh, to which Linnæus gives the name of the gadus luſcus, grows to the length of a foot. The body is deep; the ſides are compreſſed; and the ſcales, ſo far from adhering to the ſkin, as is aſſerted by ſome naturaliſts, are extremely deciduous: the eyes are covered with a looſe membrane, which the Bib can inflate at pleaſure, like a bladder; the mouth is ſmall; and beneath the chin there is a beard about an inch long. The firſt dorſal fin conſiſts of twelve rays; the ſecond, of twenty-three; and the third, of twenty: the pectoral fins have about ſixteen rays; the ventral, ſix or ſeven, of which the firſt ray is long and ſetaceous; the firſt anal fin has twenty-ſeven, and the laſt twenty-one rays. The back is of a light olive colour; the ſides are finely tinged with gold; the belly is white; the tail is black; and the anal fins are duſky, edged with lively white.

BIBIO. The wine-fly, a very ſmall inſect found frequently among empty wine-caſks. It is produced from a ſmall oblong red worm, very common in the ſediments of wine.

BICAUDA. A fiſh of the xiphias or ſword-fiſh kind, about five feet long, and a foot and a half broad at the breaſt, tapering gradually towards the tail. It is covered with a thick rough ſkin; and has ſeveral ſhort bony prickles on it's back and ſides, which are of a brown colour: the belly is white; and the fins are all of a browniſh grey, the back one being adorned with ſeveral beautiful black ſpots.

The name of this fiſh is derived from Bis, Double; and Caudia, a Tail: and is eſteemed very palatable food.

BIDET. A nag, or little horſe.

BIGGEL. A quadruped nearly about the colour and magnitude of a rein-deer; and, according to Mandelſloe, is a native of the Eaſt Indies. It's head is like that of a horſe; it's mane is like an aſs's; it has black cloven-feet; and is furniſhed with two horns.

BIL. A name given by ſome naturaliſts to a particular ſpecies of cod-fiſh.

BILLARD. An Engliſh name for the young of the coal-fiſh, or rowling pollack, up to a certain ſize; as the cod, to a certain magnitude, is called a codling.

BIOTA. A name by which Dr. Hill expreſſes the polype. This creature is of a cylindric, but variable figure; and the tentacula are arranged in a ſingle ſeries round the aperture of the mouth, at the extremity of the body.

Linnæus gives this animal the name of hydra, probably from the reproduction, or repullulation, of it's parts when cut off; and the name Biota ſeems likewiſe applicable on the ſame account. There are ſeveral ſpecies of the Biota.

BIRD. The characters of this claſs of animals are, that their bodies are covered with feathers; that each of them is furniſhed with two legs and two wings, and a hard bony bill; and that the females are oviparous.

This beautiful race of animals ſeems formed to embelliſh our foreſts, to amuſe us in our walks, and to exclude ſolitude from our moſt ſhady retirements. From them man has nothing to fear; their pleaſures, their deſires, and even their animoſities, ſerve only to enliven the general picture of nature, and to cheer the penſive and contemplative mind.

Every part of nature is furniſhed with it's proper inhabitants: the woods, the waters, and the depths of the earth, have their reſpective tenants; while the paſſive air, and thoſe tracts of ſeeming ſpace too elevated for man to aſcend, are traverſed by multitudes of the moſt beautiful feathered beings. Though all ranks and orders of animals ſeem adapted for their deſtined ſituations, none are more apparently ſo than birds; they ſhare the vegetable ſpoils of the earth in common with the quadrupeds; to compenſate their want of ſtrength, they are ſupplied with ſwiftneſs; and, in order to avoid thoſe enemies which Providence has not fitted them to oppoſe, they are endowed with the faculty of aſcending into the air. Birds, indeed, ſeem entirely formed for a life of eſcape, every part of their anatomy being calculated for ſwiftneſs; and, as they are deſigned to ſoar on high, all their parts are proportionably light.

Though, in the ſcale of nature, it muſt be admitted that Birds are inferior to quadrupeds, as being leſs imitative of human endowments; they certainly ſurpaſs fiſhes and inſects, not only with reſpect to the ſtructure of their bodies, but in their ſuperior ſagacity.

Of man, the moſt perfect animal, there are but a very few ſpecies, and the diſcriminations between them are not ſtrongly marked; of quadrupeds, the kinds are more numerous; Birds are more various ſtill;

ſtill; and fiſhes yet more; but inſects afford ſo very great a variety, that they elude the reſearches of the moſt inquiſitive naturaliſts. Quadrupeds are obſerved to bear ſome diſtant reſemblance, in their internal ſtructure, to man; but that of Birds is entirely diſſimilar: formed chiefly to inhabit the empty regions of air, all their parts are ſuited to that purpoſe; the ſhape of their bodies, which is ſharp before, in order to facilitate their paſſage through the yielding element, riſes by a gradual ſwell, and falls off in expanſive tails, which ſerve to keep them buoyant while their fore-parts are cleaving the air. They have been, for this reaſon, not unaptly compared to a veſſel making it's way through the water; the trunk of the body of the animal anſwering to the hold, the head to the prow, the tail to the rudder, and the wings to the oars.

The external formation of Birds affords matter for our admiration: particularly the poſition of their feathers, which generally tend backwards; and thus, by lying one way, and over each other in an exact and regular order, anſwer the threefold purpoſe of warmth, ſpeed, and ſecurity. Thoſe parts of the feathers next their bodies are furniſhed with a warm and ſoft down; while the external ones are arrayed with double beards in two ranks, longer at one end than at the other: theſe beards conſiſt of rows of little thin laminæ, diſpoſed and inſerted in lines, as perfect and regular as if their extremities had been cut off by the moſt curious artiſt. But, leſt theſe feathers ſhould receive any injury from their violent attrition againſt the air, or imbibe the moiſture of the atmoſphere, Birds are furniſhed with glands behind, containing proper quantities of oil, which they occaſionally preſs out with their bills, and ſpread over all thoſe feathers which require ſmoothing: theſe glands, which are ſituated on their rumps, are furniſhed with apertures, round which grow ſmall tufts of feathers ſomewhat like painters pencils. Such poultry, however, as live principally under cover, and ſeldom expand their wings in flight, have a ſmaller quantity of this fluid than thoſe which frequent the open air; the feathers of a hen, for inſtance, are pervious to every ſhower; but thoſe of a ſwan, a gooſe, a duck, or a moor-hen, as well as all ſuch Birds as nature has directed to an aquatic life, are dreſſed with oil from the very firſt day of their leaving their ſhells; and thus: their ſtocks of fluid are proportioned to the neceſſary degrees of conſumption. Their fleſh, indeed, contracts a flavour from it, which in ſome is ſo very rancid as to be totally unfit for food; but if their fleſh is injured by it, their feathers are improved, and made more valuable for all the domeſtic purpoſes to which they are uſually applied.

The feathers with which Birds are cloathed are equally worthy of admiration: the ſhaft of each is formed proportionably ſtrong, but hollow below, in order to contribute to it's lightneſs; and is filled above with pith, to afford nouriſhment to the beard ſpringing from the ſhaft of the feather on either ſide. Theſe feathers, with reſpect to their lengths and ſtrength, are generally ſo placed, as that the largeſt and ſtrongeſt may have the greateſt ſhare of duty in flight. Nor is the vane, or beard, of the feather, formed with leſs wiſdom or art: it does not conſiſt of one continued membrane, becauſe, if that were broken, it could not eaſily be repaired; but is compoſed of many layers, ſomewhat reſembling feathers, and lying againſt each other in cloſe conjunction. Towards the ſhaft of the feather, theſe layers are broad, and of a ſemicircular form, for the purpoſe of adding to their ſtrength, as well as to keep them cloſer to each other when in action. They, however, grow ſlender and taper toward the exterior edge of the vane, for the purpoſe of contributing to their lightneſs. On their inferior ſides, they are thin and ſmooth; but their upper external edges are parted into two hairy margins, having a different ſort of hair on each ſide, broad at the bottom, and ſlender and bearded above. By this mechaniſm, the hooked beards of one layer always lie near the ſtraight beards of the ſucceeding one, and by that means lock and hold each other.

The wings of thoſe Birds which fly are uſually placed at thoſe parts of their bodies which ſerve to poiſe and ſupport them in the air: they anſwer to the fore-legs in quadrupeds; and at their extremities they have a finger like an appendix, uſually called the baſtard-wing. This auxiliary inſtrument of flight is likewiſe furniſhed with quills, which differ from the common feathers only in the largeneſs of their ſize, and their ſpringing from the deeper part of the ſkin, their ſhafts lying almoſt cloſe to the bone: the beards of theſe quills are broad on one ſide, but more narrow on the other; and both contribute to the progreſſive motion of the Birds, and the cloſeneſs of their wings.

All Birds are furniſhed with two very ſtrong pectoral muſcles on each ſide of their breaſt-bones. In quadrupeds, as well as in men, the pectoral muſcles are trifling in compariſon with thoſe of Birds. In the former, the muſcles of the thighs, and the hinder-parts of the body, are by far the ſtrongeſt: but, in Birds, it is far otherwiſe; the pectoral muſcles which give motion to their wings, or arms, are amazingly ſtrong; while thoſe of their thighs are weak and ſlender. By means of theſe, a Bird can move it's wings with a degree of ſtrength which is almoſt incredible: the flap of a ſwan's wing would break the leg of a man; and a ſimilar blow from an eagle has been known to occaſion inſtant death. Such, conſequently, is the force of the wing, and ſuch it's lightneſs, as to be inimitable by human art: and as no machines which human ſkill can contrive are capable of imparting ſo great power to ſo light an apparatus, the art of flying with artificial wings, ſo often and ſo fruitleſsly ſought after, appears to be totally unattainable.

In all Birds, nocturnal ones excepted, their heads, in proportion to their bodies, are ſmaller than thoſe of quadrupeds, that they may with greater facility divide the air in the act of flying, as well as prepare a more eaſy paſſage for their bodies. Their eyes alſo are more flat and depreſſed than thoſe of quadrupeds; and their pupils are encompaſſed by ſmall plates of bone under the exterior coats of the organs of ſight, in order to ſtrengthen and defend them from injuries. Birds have alſo a kind of ſkins, called the nictitating membranes, with which they can cover their eyes at pleaſure, as with a veil, though their eye-lids continue open: theſe membranes originate from the greater or more obtuſe angles of their eyes; and probably ſerve to wipe, cleanſe, and moiſten their ſurfaces.

The eyes of Birds are admirably adapted to viſion, by a particular expanſion of their optic nerves, which renders the impreſſion of external objects more vivid and diſtinct. From this peculiar conformation, it appears that the faculty of ſight in Birds is infinitely ſuperior to that of other animals; and, indeed, is indiſpenſably neceſſary to their ſupport and ſecurity. Were the eye leſs perfect, the

Bird,

Bird, from the rapidity of it's motion, would probably ſtrike againſt almoſt every object in it's way; as well as be totally incapable of diſcerning it's proper food when ſoaring in it's own element. Thus the kite, though at an aſtoniſhing height from it's prey, darts on it with the moſt unerring aim; and the hawk deſcries the lark at a diſtance far beyond the reach of the human eye.

All Birds are deſtitute of external ears, being only furniſhed with holes for the purpoſe of conveying ſound to their auditory ducts. The horned owl, indeed, and a few other Birds, ſeem to have external ears; but this appearance is occaſioned by the projection of ſome feathers beyond the reſt on each ſide of their heads. It is probable, however, that thoſe feathers which encompaſs the ear-holes of Birds ſupply the defects of their exterior ears, ſo far as they are inſtrumental in tranſmitting various ſounds to their internal ſenſories; and the extreme delicacy and ſenſibility of their organs are eaſily proved by the facility with which ſome Birds learn muſical notes, as well as by the great exactneſs of their pronunciation of words.

The olfactory nerves in the generality of Birds appear equally curious: ſome of the feathered tribes ſcent their prey at a vaſt diſtance; and others, by the ſenſe of ſmelling, avoid their inſidious purſuers. In decoys for catching ducks, thoſe who attend on that buſineſs always keep pieces of turf burning near their mouths, on which they conſtantly breathe, leſt the fowls ſhould ſmell them, and conſequently avoid their lures. The univerſality of this practice puts the propriety of it beyond a doubt; and proves the extreme delicacy in the olfactory ſenſation with which this ſpecies at leaſt of the winged creation is endowed.

The legs and feet of Birds are lightly conſtructed, for their eaſier tranſportation through the air. The toes of thoſe which are calculated for ſwimming in the water are webbed; but, in other Birds, they are disjoined, the better to enable them to retain objects, or cling to the branches of trees with ſecurity. Such Birds as are furniſhed with long legs have alſo long necks, as they would otherwiſe be incapable of picking up their food: ſwans and geeſe, however, whoſe necks are extremely long, have very ſhort legs; and are for that reaſon better adapted for ſwimming than walking. Thus every external part appears fitted to the life and ſituation of the animal. Nor are the inward parts, though not immediately appropriated to flight, leſs neceſſary to ſafety: the bones of every part of the body are extremely thin and light, and all the muſcles very ſlight and feeble, except thoſe which afford motion to the wings; while the tail ſerves to counterbalance the head and neck, to guide the animal's flight like a rudder, and to aſſiſt it in it's aſcent and deſcent.

If we minutely examine the internal parts of Birds, we ſhall find the ſame wonderful conformation fitting them for living in air, and increaſing the ſurface by diminiſhing the ſolidity. Their lungs adhere to the ſides of their ribs and backs; but the extremities of the branches of their wind-pipes open into them; while theſe have a communication with the cavities of their bellies, and convey the air drawn in by breathing into certain receptacles reſembling bladders, extending the whole length of their bodies. Nor are theſe openings obſcure, and difficult to be diſcerned; for a probe thruſt into the lungs of a fowl will eaſily find a paſſage into the belly; and air blown into the wind-pipe will be ſeen to diſtend the animal's body. In quadrupeds, this paſſage is intercepted by the midriff; but, in fowls, the communication is obvious, and conſequently they with much greater facility take long and large inſpiration. Sometimes alſo the wind-pipe makes many convolutions within the body of the Bird, and it is then called the labyrinth; but of what uſe theſe turnings or windings are to particular Birds, neither naturaliſts nor anatomiſts have hitherto been able to develope. This difference of the wind-pipe is often found in Birds that, to all appearance at leaſt, are of the ſame ſpecies: thus, in the tame ſwan, the wind-pipe makes but a ſtraight paſſage into the lungs; while, in the wild ſwan, it pierces through the breaſt-bone, and has ſeveral turnings before it comes out again and proceeds to enter the lungs. Theſe convolutions, however, are not inſtrumental in forming the voice of the Bird; ſince thoſe fowls which are deſtitute of them are nevertheleſs vocal. We cannot therefore aſcertain from whence ſome Birds derive the loud and various modulations in their warblings: but we may venture to aſſert, that fowls, in proportion to their bulk, have louder voices than animals of any other kind; for the ſcreaming of a peacock is as loud as the bellowing of an ox.

Though all Birds, properly ſpeaking, have but one ſtomach, it is, however, very unlike in different kinds. In all the rapacious tribes the ſtomach is peculiarly formed: the œſophagus, or gullet, in them, is found to be replete with glandulous bodies, which ſerve to dilate and macerate their food as it paſſes into their ſtomachs, which are always very large in proportion to the ſizes of the Birds, and are generally enveloped in fat, in order to increaſe their warmth, and aſſiſt their digeſtive powers. The inteſtines of frugivorous Birds are differently formed from thoſe of the rapacious kinds: the gullet, in them, dilates juſt above the breaſt-bone, and forms itſelf into a pouch or bag, called the crop, which is replete with ſalivary glands, ſerving to ſoften and moiſten the food which it contains; and theſe glands are furniſhed with longitudinal openings, which emit a whitiſh and viſcous ſubſtance. The dry food of the Birds, after being macerated for a convenient time, paſſes into their bellies; where, inſtead of a ſoft, moiſt fluid, as in the rapacious kinds, it is macerated between two pairs of muſcles, commonly called the gizzard, internally covered with ſtony ridgy coats, and almoſt cartilaginous: theſe coats, rubbing againſt each other, are capable of bruiſing and attenuating the hardeſt ſubſtances, their action being ſimilar to that of the grinding-teeth in man and other animals. Thus the organs of digeſtion in Birds are in a manner reverſed. Beaſts grind their food with their teeth; after which it paſſes into their ſtomachs, where it is ſoftened and digeſted: on the contrary, Birds firſt macerate and ſoften it in their crops, and then it is ground or comminuted in their ſtomachs or gizzards. Birds are alſo careful to pick up ſand, gravel, and other hard ſubſtances; not to grind their food, as has been ſuppoſed, but to prevent the too violent action of the coats of the ſtomach againſt each other.

Many ſpecies of Birds are provided with two appendices, or blind guts, which in quadrupeds are always found ſingle. Among ſuch Birds as are thus ſupplied, are all carnivorous fowls: and all Birds of the ſparrow kind have very ſmall and ſhort ones; while water-fowl, and Birds of the

poultry kind, have the longeſt of all. There is ſtill another appendage, reſembling a ſmall worm, obſervable in the inteſtines of Birds; but which is nothing more than the remainder of that paſſage by which the yolk was conveyed into the guts of the young chicken, while yet in the egg, and under incubation. The outlet of that duct which conveys the bile into the inteſtines, is in moſt Birds a great way diſtant from the ſtomach; which circumſtance may probably ariſe from the danger there would be of the bile's regurgitating into the ſtomach during their various rapid motions.

Though Birds are deſtitute of urinary bladders, they have large kidneys and ureters by which this ſecretion is made, and carried away by one common canal. 'Birds,' ſays a celebrated anatomiſt, 'as well as ſerpents, which have ſpongy lungs, void but little water, becauſe they drink but little: they therefore have no need of bladders; but their urine diſtils down into the common canals deſigned for the reception of the other excrements of their bodies.' From this ſimple conformation of theſe animals, it ſhould ſeem that they were obnoxious to few diſeaſes; and, in fact, it is ſo: there is one, however, to which they are ſubject, and from which quadrupeds are in a great meaſure exempted, namely, their molting; for all Birds annually change their old coverings for new ones. During the molting ſeaſon, they always appear diſordered: thoſe moſt remarkable for their fierceneſs, at that time loſe all their ſpirit; and ſuch as are of weakly conſtitutions often expire under this natural diſtemper. No feeding can then maintain their wonted ſtrength: they ceaſe to breed; and that nouriſhment which at other times would go to the production of their young, is then wholly abſorbed by the growing plumage. Thoſe perſons, however, who have the management of ſinging Birds, adopt the following method of accelerating this molting-time: they incloſe the Birds in dark cages, where they keep them exceſſively warm, and thereby throw the poor little animals into an artificial fever; this practice haſtens the molt; their old feathers experience a premature death, and new ones ſhoot forth more brilliant and beautiful than the former. This method is ſuppoſed to improve the ſinging of the Birds, as well as to increaſe their vivacity; but ſcarcely one Bird in three ſurvives the dangerous experiment. Nature, unaſſiſted by art, performs the operation of molting in the following manner: the quill or feather, when firſt protruded from the ſkin of the Bird, and arrived at it's full ſize, increaſes in hardneſs as it does in age, and receives a kind of periofteum, or ſkin, round the ſhaft, by which it ſeems attached to the animal. By degrees it's ſides, or quill part, thickens, but it's whole diameter ſhrinks and decreaſes. Thus, by the thickening of it's ſides, all nouriſhment from the body becomes more ſparing; and, by the decreaſe of it's diameter, it becomes more looſely fixed in it's ſocket, till at length it drops out. In the mean time, the rudiments of an incipient quill are beginning below, and the ſkin forms itſelf into a little bag, which is fed from the body by a ſmall vein and artery, and which every day increaſes in ſize till it is protruded. While the one end vegetates into the beard or vane of the feather, that part attached to the ſkin ſtill remains ſoft, and receives a conſtant ſupply of nouriſhment, which is diffuſed through the body of the quill by that extremely light ſubſtance which we find in it's boſs or hollow: this ſubſtance, which as yet ſeems deſtitute of a name, ſupplies the growing quill with it's proper nouriſhment in the ſame manner as the umbilical artery does an infant in the womb. When, however, the quill is come to it's full growth, the vein and artery become leſs and leſs, till the little opening by which they communicate with the quill becomes wholly obliterated; and the quill, thus deprived of nouriſhment, continues in it's ſocket for ſome months, till at laſt it ſhrinks, and leaves room for a repetition of the ſame proceſs of nature.

The molting ſeaſon, with reſpect to the generality of Birds, begins about the end of ſummer, and laſts till the middle of autumn; and many of the animals ſtruggle with this malady throughout the winter alſo. Nature, however, has kindly ordained that, at a time when the feweſt proviſions are to be found, the appetites of Birds ſhould be the leaſt craving. At the beginning of ſpring, when their food becomes plentiful, the ſtrength and vigour of theſe animals return; and the bounty of Providence, together with the mildneſs of the ſeaſon, incites them to mutual affection: their vital ſpirits alſo, which were in a great degree locked up during the winter, now begin to expand. Thoſe warblings which had long been huſhed, begin to gladden the fields; and every grove and every buſh reſounds with the melodious concert. But this delightful harmony of the grove, ſo much admired by man, is by no means intended ſolely for his amuſement: it is uſually the call of the male to the female; his efforts to ſoothe her during the times of incubation; or a controverſy between two males for the affection of ſome common favourite.

At the approach of ſpring, Birds begin to pair, and to provide for the ſupport of their future progeny; and the loudeſt notes, on ſuch occaſions, generally proceed from the tuneful throats of the males, while the females expreſs their conſent in ſhort interrupted twitterings. The compacts then entered into between the two ſexes, are, for the ſeaſon at leaſt, faithfully obſerved: but many Birds live together for years, with inviolable fidelity; and when one of them pays the debt of nature, the other does not long ſurvive the loſs. We muſt not, however, expect to find this ſtedfaſt attachment very prevalent among the poultry in our yards, where their freedom is abridged, and their manners are contaminated by ſlavery: rather let us look for it in the fields and the foreſts, where nature retains her unadulterated ſimplicity; where the number of males is generally equal to that of the females; and where every little animal ſeems no leſs pleaſed with it's progeny, than wedded to it's mate. Were it poſſible, indeed, to compare the ſenſations of irrational animals, the male of all wild Birds ſeems to ſhare an equal pleaſure with the female in their young brood; and all his ſoothing melodies ſeem only directed to that important period when they are both to become parents, and to nouriſh their common progeny: and, on the arrival of that ſeaſon, they both ſeem tranſported with joy; every little action witneſſing their pride, their importance, and their parental ſolicitude.

The buſineſs of fecundation being performed, the female begins to lay her eggs. Such of them only as have been impregnated by the male become prolific; while thoſe which have been otherwiſe produced continue ſterile, and ſoon become addled through incubation. Previous, however, to laying, a neſt is prepared; the building of which

is performed with no ſmall degree of aſſiduity and apparent deſign. Some naturaliſts have aſſerted, that Birds of one kind always conſtruct their neſts in the ſame manner, and of the like materials; notwithſtanding which, it is certain that they vary as the materials, places, or climates, differ. The red-breaſt, for inſtance, in ſome parts of England, builds it's neſt of oak-leaves; and, in other parts, with moſs and hair. Some Birds, which in this iſland form very warm neſts, are very indifferent about that circumſtance in the tropical climates, where the natural heat of the weather promotes incubation. In general, however, every ſpecies of Birds has a peculiar kind of architecture, adapted either to the number of eggs, the climate, or the heat of the bodies of the reſpective animals. Where the eggs are numerous, it is then neceſſary that the neſt ſhould be warm, in order that the animal heat may be equally diffuſed to all. Thus, the wren, as well as all the other ſmall Birds which have many eggs, require very warm neſts: on the contrary, the plover, the eagle, and the crow, which have but few eggs, are not ſo ſolicitous in this reſpect, their bodies being ſufficiently large to cover the ſmall number on which they ſit.

The difference of climate ſometimes occaſions vaſt alterations in the conſtruction of the neſts of Birds. Some water-fowl, which build very ſlovenly neſts with us, in the more frigid regions of the north are very particular in their ſtructure: for they there take every precaution to keep them warm; and ſome of them even ſtrip the down from their own breaſts, for the purpoſe of lining their neſts with greater ſecurity. In general, however, all Birds, when hatching, reſort to thoſe climates and places where their food is found in the greateſt plenty. Aquatic Birds, as well as the largeſt of the land kinds, ſelect ſuch ſituations as are moſt remote from man; their food, in general, being different from that which is cultivated by human labour. Some Birds, which regard the ſerpent as their deadlieſt foe, build their neſts depending from ſmall boughs, and form their entrances from below; thereby equally ſecuring them from the ſerpent and the monkey tribes: but ſmall Birds, which feed upon fruits and corn, make uſe of every precaution to conceal their neſts from man; while the great Birds, remote from human ſociety, employ every art to render theirs inacceſſible to wild beaſts or vermin.

While the female is hatching, nothing can exceed her patience; neither the calls of hunger, nor the near approach of danger, being capable of driving her from her neſt. Though fat when ſhe begins to ſit, before the time of incubation is expired, ſhe is uſually reduced almoſt to ſkin and bone. Ravens and crows, while their females are ſitting, take care to ſupply them with food: but this is not the practice of moſt of the ſmaller Birds; the males of which, during the whole time, ſit upon ſome neighbouring tree, and ſoothe the females with their ſongs; frequently taking their places when they are weary, and continuing on the eggs till their return. Sometimes, indeed, the eggs acquire too great a degree of heat; and, in that caſe, the females remove from them, in order to allow them time to cool a little; but afterwards return with pleaſure and perſeverance to reſume their taſk.

Such is the power of inſtinct in animals of this claſs, that they appear to be driven, as it were, from one appetite to another, and continue almoſt paſſive under it's influence. We cannot apply reaſon to ſuch a paſſion, ſince the firſt dictates of that principle would be ſelf-preſervation. 'Take a brute,' ſays Mr. Addiſon, 'out of his inſtinct, and you will find him wholly deprived of underſtanding. With what caution,' continues he, 'does the hen provide herſelf a neſt in places unfrequented, and free from noiſe and diſturbance! When ſhe has laid her eggs in ſuch a manner that ſhe cannot cover them, what care does ſhe take in turning them frequently, that all parts may partake of the genial warmth! When ſhe leaves them, in order to provide for her neceſſary ſuſtenance, how punctually does ſhe return before they have had time to cool, and become incapable of producing an animal! In the ſummer, you ſee her giving herſelf greater freedoms, and quitting her care for above two hours together; but in winter, when the rigour of the ſeaſon would chill the principles of life, and deſtroy the young one, ſhe grows more aſſiduous in her attendance, and ſtays away but half the time. When the birth approaches, with how much nicety and attention does ſhe help the chick to break the priſon! not to take notice of her covering it from the injuries of the weather, providing it with proper nouriſhment, and teaching it to help itſelf; nor to mention her forſaking the neſt, if, after the uſual time of reckoning, the young one does not make it's appearance. A chymical operation could not be followed with greater art or diligence, than is ſeen in the hatching of a chick, though there are many Birds which ſhew an infinitely greater ſagacity: yet, at the ſame time, the hen, which has all this ſeeming ingenuity, conſidered in other reſpects, is without the leaſt glimmerings of thought or common ſenſe: ſhe miſtakes a piece of chalk for an egg, and ſits upon it in the ſame manner; ſhe is inſenſible of any increaſe or diminution in the number of thoſe ſhe lays; ſhe does not diſtinguiſh between her own and thoſe of another ſpecies; and, when the birth appears, though of ever ſo different a kind, will cheriſh it for her own. A hen, followed by a brood of ducks, will ſtand affrighted at the edge of a pond, trembling for the fate of her young, which ſhe ſees venturing into ſo dangerous an element. As the different principles which actuate theſe different animals cannot be termed reaſon, ſo, when we call it inſtinct, we mean ſomething of which we have no knowledge. It appears to me the immediate direction of Providence; and ſuch an operation of the Supreme Being, as that which determines all the portions of matter to their proper centres.'

Indeed, the production of their young ſeems to be the great æra of felicity in animals of this claſs. At that time, nothing can exceed their induſtry and ſpirit; the moſt timid becoming courageous in the defence of their young: while thoſe of the rapacious kind are at that ſeaſon uncommonly fierce and active; they haſten with their prey, yet throbbing with life, to their neſts, and early initiate their young to ſcenes of ſlaughter and cruelty. Nor are thoſe of a milder nature leſs buſily employed: the little Birds then diſcontinue their ſinging, being engaged in the more important purſuits of common ſubſiſtence.

While the young continue in the neſt, the old ones provide them with a proper ſupply of food; and, that no individual may be overlooked, each is ſerved in it's turn. If they perceive that man has been buſy with their neſt, or has handled their little ones, they abandon the place by night, and

provide

provide their brood a more ſecure retreat. When the whole family are fully plumed, and capable of avoiding danger, they are led forth in fine weather, and taught the art of providing for their own ſubſiſtence, by being conducted to thoſe places where their food is moſt likely to be found: they are alſo at the ſame time inſtructed in the method of picking it up, and carrying it away; and are then re-conducted to the neſt, where they continue a day or two longer. At length, when they are fully qualified to ſhift for themſelves, the old ones again take them abroad; and, after leading them to the accuſtomed places, leave them to ſhift for themſelves; and all connection ceaſes.

Thoſe Birds which are hatched earlieſt in the ſeaſon are the ſtrongeſt and moſt vigorous; while ſuch as have been delayed till the middle of ſummer are more tender and feeble, and ſometimes incapable of ſuſtaining the rigours of the enſuing winter. The very Birds themſelves ſeem to be ſo ſenſible of this difference, that they endeavour to breed early in the ſpring; but, if their endeavours are obſtructed, by having their neſts robbed, or by any other accident, they ſtill perſevere in their efforts for a progeny; and it ſometimes happens that they are retarded by a variety of accidents even to the middle of winter. What number of eggs a Bird is capable of laying in one ſeaſon, has never yet been aſcertained; but it is certain that ſuch as would have laid but two or three at the moſt, if their neſts be robbed, or their eggs ſtolen, will lay above ten or twelve. A common hen, if properly fed, will lay upwards of a hundred from the beginning of ſpring to the latter end of autumn. In general, however, it is obſerved, that the ſmalleſt and weakeſt tribes are the moſt prolific; while the ſtrong and the rapacious are abridged by ſterility. Thus, ſuch kinds as are eaſily deſtroyed, are as eaſily repaired; and Nature, where ſhe denies the power of reſiſtance, generally compenſates the defect by beſtowing extraordinary fertility.

Birds in general, though naturally timid, are ſeldom frightened away from their uſual haunts: they are perfectly formed for a wandering life, and ſupplied with powers to ſatisfy all their appetites. But, though they are ſo well qualified for changing their retreats with eaſe and rapidity, moſt of them remain contented in thoſe diſtricts in which they have been bred, ſeldom exerting their powers in proportion to their endowments. The rook, if undiſturbed, will never deſert it's native grove; the blackbird does not often relinquiſh it's uſual haunts; and the red-breaſt, though ſeemingly mild, claims a certain diſtrict, from whence it ſeldom moves, but drives from thence every intruder of it's own ſpecies without pity or remorſe.

Hunger, climate, and fear, are to Birds the chief incentives to migration; and from one or other of theſe powerful motives, thoſe which are called Birds of paſſage annually forſake us for ſome time, and afterwards make their regular and expected returns. Though nothing, perhaps, has excited the curioſity of mankind more than theſe annual migrations, few ſubjects continue ſo much enveloped in uncertainty. The cauſe of their retreat from ſome of our European iſlands is generally ſuppoſed to originate either from a ſcarcity of food at certain ſeaſons, the alterations of the climate, or the want of a ſecure aſylum from the perſecution of man during the time of incubation and foſtering their young. Thus, in Sweden, at the approach of winter, the ſtarling, no longer finding ſubſiſtence in that kingdom, deſcends annually into Germany; and the hen-chaffinches of the ſame country are obſerved to fly through Holland in large flocks about the beginning of autumn, in order to paſs their winters in a milder climate.

Some Birds are known to undertake journies, the length and fatigues of which would intimidate human perſeverance. In ſpring, the quails forſake the burning heats of Africa for the milder ſun-beams of Europe; and, after continuing with us during the ſummer, wing their way back to enjoy the temperate air of Egypt, as ſoon as it begins to be delightful. Theſe peregrinations appear to be concerted ſome days previous to their departure: multitudes of them aſſemble in ſome open place; and, by a kind of chattering, ſeem to ſettle the method of procedure. Their plan of operations being determined on, they all take flight together; and often appear hovering in ſuch prodigious numbers over the ſea, that to mariners they appear like a cloud reſting on the horizon. The boldeſt, ſtrongeſt, and by far the greateſt number, carry their plan into execution: but others of their company grow weary by the way; and, quite exhauſted by the fatigues of their flight, drop into the ſea, and ſometimes even on the decks of ſhips.

Among the amazing number of water-fowl which frequent our coaſts, it is curious to reflect how few are known to breed on them. It is certain, however, that they cannot quit this country merely for the want of food; though to obtain a more ſecure retreat may perhaps be their chief motive. This country is probably now too populous for Birds ſo ſhy and timid: when it was leſs cultivated, and contained extenſive tracts of woods and marſhes, many ſpecies of Birds which now migrate, remained with us throughout the year. The great heron and the crane, which have long forſaken this country, in former times bred familiarly in our marſhes, ſeemed to animate our fens, and, like the generality of cloven-footed aquatic fowls, built their neſts on the ground. They had then but little to dread: the ſurrounding marſhes protected them from all carnivorous quadrupeds, and their own ſtrength from Birds of prey; but, in proportion as agriculture increaſed, they were more and more diſturbed by the intruſions of man; and were at length obliged to ſeek other retreats, where they might live more remote from dangers and alarms.

Though the tribes of the duck kind are very numerous, we know of no more than five which breed in this country; namely, the tame ſwan, the tame gooſe, the ſheldrake, the eider-duck, and the wild duck: the reſt unite with that amazing quantity of wild fowl which inhabit the dreary lakes and deſarts of Lapland, where they perform, in undiſturbed ſecurity, the duties of incubation and nutrition. There are, indeed, but few of this kind which cannot be traced to the northern deſarts; and to countries abounding with lakes, rivers, ſwamps, and mountains covered with thick and gloomy foreſts, which afford the moſt perfect ſafety to theſe naturally timid animals: from the thickneſs and extent of the woods in thoſe regions, the ground continues moiſt and penetrable during the ſummer ſeaſon; and the woodcock, ſnipe, and other Birds with ſlender bills, can feed with convenience and eaſe; while thoſe which are web-footed find plenty of food from the numbers of inſects which ſwarm there in incredible numbers. It is not therefore aſtoniſhing that amazing numbers of fowls ſhould deſcend

ſcend from theſe regions at the approach of winter; numbers to which the army of Xerxes was but comparatively ſmall; and which Linnæus has obſerved, for eight whole days and nights ſucceſſively, to cover the ſurface of the River Calix.

Theſe fowls generally migrate from the northern countries in the month of September, and diſperſe themſelves over all the ſouthern parts of Europe. To obſerve the order of their flight, is indeed amuſing: ſometimes they range themſelves in a long line; and, at others, they march angularly, forming two lines which unite in the centre. The leader at the point ſeems to cleave the air, as if to facilitate the paſſage of thoſe which are to follow; and, when weary of this laborious ſtation, retreats into one of the wings of the file, and is ſucceeded by another pilot. About the beginning of October they make their firſt appearance with us, circulating round our ſhores; and, when compelled by ſevere froſt, repairing to our lakes and rivers. Some, indeed, of the web-footed fowls, of hardier conſtitutions than others, endure the rigours of the northern climates during the whole winter; but, when this ſeaſon is uncommonly ſevere, they are obliged to betake themſelves to more ſouthern ſkies; and at ſuch periods only we are viſited by the diver, the wild ſwan, and the ſwallow-tailed ſheldrake.

That irrational animals ſhould be able to perform ſuch long journies, and how they ſhould know when and whither to direct their courſes, has often afforded matter of contemplation to the curious: but the ſame inſtinct which governs all their other actions, certainly operates here alſo. Indeed, they rather follow the weather than the country; and, when they perceive the variations of the air in their favour, they proceed in their journey till they diſcover land to reſt on. It can hardly be ſuppoſed that they retain any remembrance of that country in which they had ſpent a former winter: nor is it probable that they can diſcern, from their height in the air, thoſe regions to which they travel; ſince, though they ſhould aſcend even for miles, the convexity of the globe muſt interrupt their view.

There is, however, a circumſtance attending the migration of ſwallows, which envelopes this ſubject in great obſcurity. At the approach of winter in Europe, it is univerſally allowed that they are ſeen in amazing numbers migrating into other climes; and that their return into this country is about the beginning of ſummer: but it is equally true, that many of them continue here during the winter in a ſtate of torpitude, making old walls, or the hollows of trees, the places of their retreat; and even ſinking in cluſters to the bottoms of the deepeſt lakes, where they repoſe in perfect ſecurity.

It ſeems difficult, however, to account for the various methods which theſe animals make uſe of for eluding the ſeverities of winter. It has been ſuppoſed by ſome, that their blood loſes it's motion through the cold: but if Buffon, who is ſaid to have placed many of this tribe in an ice-houſe, found that the ſame cold, by which their blood was congealed, was alſo fatal to their exiſtence; it is doubtful whether there may not be a ſpecies of them, though apparently like the reſt, formed internally ſo as to be fitted for a ſtate of inſenſibility during the winter in this country. Some naturaliſts, indeed, have ſuggeſted, that the ſwallows which remain thus torpid may be only ſuch as are either too weak, or were hatched too late, to join the general convoy: yet on theſe laſt Buffon tried his experiment, and they all died under the operation.

But though ſome Birds, by emigrating, make their habitations in different parts of the earth, almoſt every climate has fowls peculiar to itſelf. Thoſe of the temperate zone are not very remarkable for the beauty of their plumage; but the ſmaller kinds fully compenſate this defect by the melody of their voices. The Birds of the torrid zone are very bright and vivid in their colours, but they in general have either harſh and diſagreeable voices, or are totally ſilent: the frigid zone, on the contrary, where the adjacent ſeas abound with fiſh, is ſtocked with Birds of the aquatic kind, in much greater plenty than in Europe; and theſe are generally either cloathed with warm coats of feathers, or have large quantities of fat lying beneath their ſkins, which ſerve to defend them from the rigours of the climate. In all countries, however, Birds are longer lived than quadrupeds or inſects of the ſame climates. Even the life of man is ſhort when compared with the lives of ſome Birds: it is ſaid that ſwans have ſometimes lived three hundred years, and that geeſe have been often known to exceed fourſcore; while linnets, and other ſmall Birds, ſeldom ſurvive fourteen or fifteen.

Birds are in general leſs than quadrupeds; that is, the largeſt of the one claſs is far ſuperior in magnitude to the largeſt of the other. The oſtrich, which is the biggeſt of the Bird tribe, bears no proportion to the elephant; and the ſmalleſt humming-bird, the moſt minute of the claſs, is conſiderably leſs than the mouſe. In theſe the extremities of nature are plainly diſcernible: the oſtrich, ſeemingly covered with hair, and incapable of flight, approaches the quadruped claſs; while the humming-bird, which hardly exceeds the humble-bee in magnitude, and has a fluttering motion, ſeems nearly allied to the inſect race. But theſe extremities are rather objects of human curioſity than utility: it is the middle order of Birds which man has taken under his protection, and which adminiſters to his pleaſures and his neceſſities. Wild Birds are, for the moſt part, of the ſame magnitudes and ſhapes; and ſtill retain ſtrong marks of their original nature. But it is far otherwiſe with domeſtic fowls: theſe, changing at the will of man, and according to the variety of climates to which they are conſigned, the food with which they are ſupplied, and the purpoſes for which they are employed, vary in their colours, ſhape, and magnitude, as well as in the nature and taſte of their fleſh.

That Birds are capable of receiving inſtruction, is abundantly manifeſt. A very ſurprizing inſtance of this kind was ſeen a few years ago in London; where a Canary Bird was taught to pick up the letters of the alphabet, and ſo to arrange them at the word of command, as to ſpell the name of any perſon in company; while the motions which on this occaſion were given by the maſter, and obeyed by the little animal, eluded the diſcernment of every ſpectator.

The remarkable docility of the hawk, the parrot, the magpye, the bullfinch, and a variety of other Birds, can hardly have eſcaped the notice of the moſt ſuperficial obſervers of nature.

Birds are diſtinguiſhed either by their living on the land or in the water; and both claſſes are eaſily known by their legs and toes. The toes of all land Birds are divided, without any membranes or webs between them; and their legs and feet ſerve for the purpoſes of running, graſping, and

climbing. The legs and feet of water-fowls, on the contrary, are adapted either for wading in the water, or ſwimming on it's ſurface. The legs of thoſe which wade are uſually long and naked; and the toes of thoſe which ſwim are webbed together, as in the feet of a gooſe; which ſerve, like oars, to impel them forward with greater velocity. The formation of land and water fowls is, therefore, as diſtinct as their habits; and Nature herſelf, in methodizing animals of the feathered creation, ſeems to offer us this ſimple diſtribution. But, as the number of Birds already known amounts to near a thouſand, and new ſpecies are daily adding to the catalogue, it is not ſufficient to be able to diſtinguiſh a land from a water fowl; we ought alſo to be capable of making a diſcrimination between the different ſorts of Birds, and even the varieties in the ſame kind, when they are preſented to our view.

Linnæus divides Birds in general into ſix claſſes; namely, the rapacious kind, the pye kind, the poultry kind, the ſparrow kind, the duck kind, and the crane kind; the various ſorts of land Birds being comprehended in the four firſt, and thoſe which belong to the liquid element in the two laſt.

Birds of the rapacious kind conſtitute that claſs of carnivorous animals which live by rapine: they are diſtinguiſhed by their beaks, which are hooked, ſtrong, and notched at the points; by their ſhort muſcular legs, their ſtrong toes, and their ſharp and crooked talons; by the ſtrength of their bodies, and the impurity of their fleſh; by the nature of their food, and by the cruelty and ferocity of their manners.

The beaks of Birds of the pye kind are differently formed from thoſe of the rapacious tribes, which in ſome degree reſemble a wedge, being fitted for the purpoſe of cleaving: their legs are ſhort and ſtrong; their bodies are ſlender and impure; and their food is miſcellaneous. They breed in trees; and the females are fed by the males during the time of incubation.

The bills of Birds of the poultry kind are ſomewhat convex, for the purpoſe of gathering their food; the upper parts of their beaks hang over the lower; their bodies are fat and muſcular; and their fleſh is white and pure. They live principally on grain, which is moiſtened in their crops; they make very inartificial neſts on the ground; lay a great number of eggs; are ſtrangers to connubial fidelity; and, unlike the other claſſes of Birds, are promiſcuous in their amours.

All the beautiful and vocal claſſes of Birds which adorn our fields and groves, are comprehended under the ſparrow kind. Their bills reſemble a forceps; their legs are formed for hopping along; and their bodies, which are tender, are pure in ſuch as feed on grain, but impure in ſuch as feed on inſects. They chiefly inhabit trees: many of them ſhew abundance of deſign in the ſtructure of their neſts; and they are remarkable for their fidelity in the connubial compact.

The bills of Birds of the duck kind, which are ſmooth, covered with ſkin, and nervous at the points, ſerve as a kind of ſtrainers to their food. Their legs are ſhort, their feet are formed for ſwimming, and their toes are connected by membranes. They paſs the greateſt part of their time in the water, but generally breed on land.

The bills of Birds of the crane kind are formed for the purpoſes of ſearching and examining the bottoms of pools; their legs are long, and adapted for wading; their toes are not webbed; their thighs are half naked; their bodies are ſlender, and covered with thin ſkins; their tails are ſhort; and their fleſh is favoury. They live on animal food, and generally build their neſts on the ground.

Such are Linnæus's diviſions of Birds; which, at firſt ſight, appear natural and comprehenſive: but he who, while attending to ſuch arbitrary diſtributions, ſhould imagine he was making conſiderable progreſs in the ſtudy of natural hiſtory, would find himſelf egregiouſly miſtaken; and, if he is inclined to enter deeply into the plan of this great naturaliſt, he will often find Birds the moſt diſſimilar in nature thrown together into the ſame claſs: the unavoidable conſequence of all attempts at compleat ſyſtematic arrangements of nature.

BIRD OF PARADISE. This moſt beautiful bird belongs to the family of the pye kind; of which naturaliſts have enumerated ſeveral ſpecies, though we are indebted to the recent diſcoveries of Sonnerat for ſome of the moſt elegant. Indeed, few birds have more puzzled and deceived the learned than the Bird of Paradiſe. Some have deſcribed it as an inhabitant of the air, living only on the dew of heaven, and never reſting on the earth; others, though they have acquieſced in the latter part of it's hiſtory, have nevertheleſs allowed that it ſubſiſts on flying inſects: and ſome have even aſſerted that it has no legs; while others not only contend that it has very large and ſtrong ones, but abſolutely rank this animal among birds of prey.

The amazing beauty of the plumage of this bird on the one hand, and the deformity of it's legs on the other, ſeem to have given riſe to the moſt erroneous reports. The natives of the Molucca Iſles, of which the Bird of Paradiſe is an inhabitant, perceiving the ſtrong inclination of Europeans for this beautiful bird, carefully cut off it's legs before they brought it to market; and thus concealing it's greateſt deformity, they conſidered themſelves as entitled to riſe in their demands. One deceit led to another: the buyer, finding the bird without legs, naturally enquired after them; and the ſeller thought it his intereſt to deny that it ever had any. Thus far the Europeans were impoſed on by others; but afterwards they impoſed on themſelves. Seeing ſo beautiful a bird deſtitute of legs, they concluded that it could only live in air, where thoſe members were unneceſſary: the extraordinary ſplendor of it's plumage aſſiſted this deception; and, as it poſſeſſed celeſtial beauty, it was honoured with an imaginary celeſtial reſidence; and from this circumſtance it's name is derived, as well as the numerous fictitious reports which ignorance and deſign have propagated concerning it, and which blind credulity has believed. Error, however, is ſhort-lived; and time has diſcovered, that this bird has not only legs, but that they are very large and ſtrong in proportion to it's ſize. Credulity, when undeceived, runs into the oppoſite extreme; and accordingly, very ſoon after, this bird was branded with the character of being extremely rapacious; and, from the amazing rapidity of it's flight, was deemed qualified for extenſive rapine.

The Birds of Paradiſe, which exceed all others in the beauty, variety, and peculiar conſtruction of their plumage, aſſociate in large flocks in the delightful ſpicy woods and groves of their native iſlands; and the inhabitants themſelves, who are not inſenſible to their ſuperior charms, give them the name of God's Birds. From the rapidity of their flight,

flight, as well as from their being continually on the wing in purſuit of inſects, their uſual prey, they are ſometimes called the ſwallows of Ternate. However, as the country where they breed is viſited with tempeſtuous ſeaſons, during which rains and thunders continually diſturb the atmoſphere, theſe Birds are ſeldom ſeen at ſuch times; and it is ſuppoſed that they then migrate to countries where their food is to be found in greater abundance; for, like ſwallows, they have their ſtated periods of return.

In the beginning of the month of Auguſt, they are ſeen flying together in great numbers; and, as the inhabitants of the Molucca Iſles are inclined to believe, following their king, who is diſtinguiſhed from his ſubjects by the beauty of his plumage, and that reſpect and veneration which they are ſuppoſed to render him. In the evening they perch on the higheſts trees of the foreſt; and particularly one which bears a red berry, on which they ſometimes feed when they find a deficiency of more deſirable ſupport. The natives, many of whom make a trade of killing and ſelling them to Europeans, generally conceal themſelves in thoſe trees to which the birds are known to reſort; and, having furniſhed themſelves with arrows, exert their utmoſt endeavours to ſhoot the king: this being effected, the greateſt part of the flock become an eaſy prey. When they have taken a number of theſe birds, the uſual method is to gut them, and cut off their legs; they then thruſt hot irons into their bodies, the heat of which dries up all internal moiſture; and, filling the cavities with ſalt and ſpices, carry them to the uſual reſorts of Europeans.

Bird of Paradise, Common. This Bird is, in appearance, as large as a pigeon; but it's body, in reality, is by no means bigger than that of the common thruſh. It's head, throat, and neck, are of a pale gold colour; the baſe of the bill, the ſides of the head, and the throat, are covered with black feathers as ſoft as velvet, and changeable like thoſe on the neck of a mallard; the hinder part of the head is of a ſhining green mixed with gold; the body and wings are chiefly covered with beautiful brown, purple, and gold feathers; the ſuperior parts of the tail-feathers are of a pale yellow, thoſe under them being whiter and longer, ſo that the extremity of the tail appears to be wholly white; and from the upper-part of the rump proceed two ſlender filaments, longer than the whole body of the bird, and bearded only at the ends.

Bird of Paradise, of Marcgrave. This bird, which is of the ſize of the ſwallow, has a ſmall head and eyes, a ſharp bill, thick feet, and crooked claws. The feathers about the bill are ſilky, being a mixture of green and brown above, and black below; the ſuperior part of the neck is of a gold colour, and the inferior is a mixture of green and gold; the breaſt is of a deep brown; and the reſt of the body, wings, and tail, are of a beautiful browniſh colour, the long feathers near the ſides being of a gold colour near their riſe, but in their other parts of a whitiſh yellow, and the two projecting quills of a gold colour at their riſe, but becoming of a darkiſh brown towards their extremities, and conſiderably bent.

Bird of Paradise, Greater. This ſpecies is about the ſize of a blackbird. The wings, when cloſed, meaſure ſeven inches; the long ſhafts ſpringing from the rump, twenty-ſeven inches; and the longeſt of the ſoft looſe feathers, riſing from under the wings, twenty-one inches. The bill is about an inch and three-quarters long; and, from it's tip, to the extremities of the common or ſhorter feathers of the tail, about twelve inches. The bill has a ſlight convexity towards the point, and is of a dirty yellowiſh green colour; the fore-part of the head is covered with black feathers of a velvet gloſs, which entirely ſurround the bill; the throat is covered with green feathers of the ſame velvet fabric, ſhining with a golden gloſs; and fine yellow feathers extend from the upper part of the head to the ſides of the neck, and almoſt encircle the green ones on the throat. The breaſt is covered with plumage of the common ſtructure, and of a fine dark purpliſh colour: the reſt of the body, the back, the belly, the wings, and the tail, are of a bright reddiſh cheſnut colour; but the inſide of the wings, and the under-ſide of the tail, are much darker than the upper. Two black filaments, like horſe-hairs, but ſtiffer and ſtronger, ſpring from the rump; having narrow webs on both ſides, for about four inches of their length.

This Bird is chiefly remarkable for the plats of feathers under the wings on each ſide, which extend themſelves a great way beyond the common feathers of the tail. Theſe feathers are of a very fine ſtructure, and exceedingly light; and the webs are ſo very open, that they may be ſeen through like gauze. The longer feathers are of a light reddiſh brown; and the ſhorter, which fall over them, are of a very bright yellow, with a reddiſh tinge at their tips. They fall either above or under the tail, but are ſo very looſe, that they diſcloſe the tail either way. The legs and feet, which are ſhaped like thoſe of the pye kind, are armed with claws of a moderate ſtrength, and of a dark brown colour.

Bird of Paradise, King, of Edwards. This very elegant bird is about the ſize of the chaffinch. The bill is pretty ſtraight, ſomewhat ſlender, and of a yellow colour towards the angles of the mouth. The upper mandible of the bill is covered half way with velvet feathers of an orange colour; the head is covered with velvet or pluſh-like feathers, which ſeem to be characteriſtic of the genus; the neck, the back, the upper ſides of the wings, and the tail, have feathers of the common ſtructure, of a full red colour a little inclining to cheſnut, and of a moſt beautiful gloſs; the under part of the neck has a mixture of black, blended with red; the inſides of the greater feathers of the wings are of a reddiſh yellow; the inner covert-feathers of the wings are white; and the under ſide of the tail is duſky. Under each wing there is a remarkable tuft, compoſed of ſeven or eight feathers of a dark blackiſh brown colour, with very fine gloſſy green tips; and each feather has a tranſverſe bar or line of a whitiſh colour which parts the green part of it from the duſky. On the breaſt there is a creſcent of a ſhining dark green colour, the horns of which point upwards; and this creſcent is divided from the neck by a yellowiſh light line paſſing tranſverſely above it. The belly, thighs, and coverts under the tail, are white; but towards the knees the colour becomes a little browniſh. Five ſtiff naked ſtems of feathers, each about ſix inches long, ſpring from the upper ſides of the middle of the tail, which towards their extremities are beſet with webs on one ſide, and curled round ſo as to form circular terminations, flat and ſhining, of a variable colour partaking of red and green. The legs of this bird are of a dark brown; and it has four ſtrong light-coloured toes.

Bird of Paradise, King, of Clusius. This bird

bird is the ſmalleſt of the genus. The wings are conſiderably longer than the body; the bill is white; the lower part of the upper mandible is covered with a ſort of red ſilky down, as well as the fore-part of the head, but the middle part about the eyes is full of black ſpecks; the feathers on the neck and breaſt, which reſemble ſilk, are of a deep black colour; the back, wings, and tail, are of a duſky yellow; beneath the breaſt is a black ſtripe as broad as the little finger; and the feathers which cover the belly are white, but black near the wings. The naked quills are ſlender and black, and rolled up into a kind of balls at the ends; on one ſide of which balls there are very fine ſhaggy hairs, their upper parts being of a ſhining deep green, and their under ones of a duſky yellow.

Bird of Paradise, King, of Sonnerat. This bird, as deſcribed by that very ingenious voyager, and accurate naturaliſt, who ſays that all his predeceſſors have either given an imperfect idea of it, or copied it from defective models, is about the ſize of the common European blackbird. It's head, neck, throat, back, tail, and wings, are of a ſhining red, as bright and vivid as carmine, and of a ſoft and ſilky appearance. The middle of the belly is white, terminated by a tranſverſe bar of green below the neck; the feathers which form this bar being of a brightneſs and poliſh reſembling metal. On each ſide of the belly, beneath the wings, there are long feathers, brown at their baſes, and alſo a conſiderable way upwards, but terminating in green points of the ſame luſtre as the tranſverſe bar on the breaſt. From the middle of the tail proceed two long filaments or ſhafts of blackiſh feathers without beards, which extend far below the tail and wings; and, near their extremities, theſe ſhafts become bearded on one ſide, and convolving themſelves, form a pretty large circle, with an opening in the centre; which circle is of an emerald colour, bright and varying. Above the eyes there is a black ſpot; the irides are yellow; and the bill and feet are of this laſt colour.

Bird of Paradise, Golden. This ſpecies is ſomewhat larger than a ſwallow. The bill, which is pretty long in proportion to it's ſize, is of a brownish colour towards the head, and black at the point, with a little incurvation downwards. Between the eyes and the bill there are ſome black velvet feathers, narrow at the baſe of the upper mandible, and extending themſelves from the lower mandible about an inch down the throat. The head, the upper ſide of the neck, and the back, are covered with feathers of a very fine reddiſh orange or gold colour, long and looſe on the neck, and falling a little over the breaſt. The breaſt, the belly, and the larger feathers of the wings, are of a very beautiful yellow, or pale orange colour; and the covert-feathers of the wings are black, with a ſlight mixture of yellow. The golden or yellow colour of this bird is ſo extremely vivid, as to baffle all imitation. The tail-feathers are of a deep black above, and of a ruſty black beneath, the under-parts of their ſhafts appearing yellowiſh; and all of them have very narrow borders of yellow juſt at their tips. The legs are of an olive colour, and the claws are pretty ſtrong.

Bird of Paradise, Pyed. This bird has a duſky or black bill, compreſſed like that of a duck, and at the baſe of the upper mandible there are black ſtiff hairs. The head and neck are entirely black, adorned with a creſt of looſe ſlender feathers bending backwards. The body, except the wings, is wholly white; the prime quills, which are black, have a little whiteneſs at their roots, and the baſtard-wing which covers their bottoms is of the ſame colour. The quills next the back are black in the middle, and white on the edges; the row of feathers immediately above them is the ſame; and the leſſer covert-feathers of the wings are white, with a very fine daſh of black down each feather. The tail is as long as that of a magpye, the two middle feathers exceeding the reſt by ten inches: the tail-feathers are white, the ſhorter ones being tipped and bordered with a fringe of black; and the ſhafts of theſe feathers are black, except ſo much of the long ones as extends beyond the ſhorter. The legs, feet, and claws, are of a lead colour; and the feet reſemble thoſe of the king's-fiſher, the middle and exterior toes of each foot being joined together almoſt to the claws, and the middle and inner ones to the firſt joint.

Bird of Paradise, Violet-Throated, or Superb. This ſpecies, which is ſomewhat larger than a blackbird, has a black tuft proceeding from the baſe of the bill, compoſed of fine ſhort feathers ſtanding erect. The head, the ſuperior part of the neck, and the back, are covered with green plumage of a golden tinge; which, both to the eye and touch, has all the gloſs and ſoftneſs of velvet. The wings are of a deep black, but without any gloſs; while the tail, on the contrary, though entirely black, appears like velvet, and is ſlightly ſhaded with blue. The throat is of a varying violet, the feathers which cover it having a ſilky appearance; and the belly is of a vivid green, both ſides, beneath the wings, having tufts of black velvet plumes of the ſame length as the wings. The bill is black, and the legs are brown. This very elegant ſpecies was firſt diſcovered by Sonnerat, in his voyage to New Guinea; of which country it appears to be a native.

Bird of Paradise, Golden-Throated. This bird is nearly of the ſize of the common dove. From the ſuperior part of the bill ſprings a tuft, which the animal ſeems capable of elevating, and which is compoſed of the moſt beautiful feathers, pretty ſtrong, and furniſhed with ſlight webs. The baſe of the tuft towards the bill is wholly black; but the reſt of it is black and white intermixed. The upper-part of the head, the cheeks, and the beginning of the throat, are of a fine black ſhaded with violet. Behind the head there is a gold-coloured band, compoſed of the ſame kind of feathers with thoſe which cover the throat. Theſe feathers, which are long, narrow, and thick ſet, are black at their roots, of a reddiſh caſt upwards, and they terminate in golden lips: yet they are arranged in ſuch a manner, that nothing but the gold-colour is externally perceptible. This colour, however, varies according to the lights in which it is viewed: ſometimes it appears like different ſhades of gold; at others with an admixture of green, red, or violet; and not unfrequently with all theſe colours at once. The back is a deep black with a ſlight tinge of violet; and the tail and wings, which are black, have a velvet gloſs. From the under-part of the wings proceed long black feathers pointing upwards, which embrace the wings when cloſed; the beards of theſe feathers are not united together, but ſeparated like thoſe of the oſtrich.

This bird is peculiarly diſtinguiſhed from all others of the genus by three long feathers ſpringing from both ſides of the head, behind and a little below the eyes; theſe extend to a fourth part the length of the tail, and terminate in black

webs

webs of an oval figure; their ſhafts are likewiſe black, and appear, when minutely inſpected, to be ſlightly bearded on one ſide; at their inſertions, they are very cloſe to each other, but they ſoon diverge in ſtraight lines pretty diſtant at their extremities. Sonnerat informs us that, having never ſeen this bird alive, he is at a loſs to pronounce whether, in the act of flying, it carries theſe extraordinary feathers along it's body, or in a tranſverſe direction; but as they are ſituated near the auditory paſſage, he ſeems inclined to believe that they anſwer the ſame purpoſe as the ear-drums in quadrupeds. The feet and bill of this ſpecies are a clear black; and the irides are yellow.

Bird of Paradise, Magnificent. This bird is about a third part larger than a common pigeon. The top of the head is of a ſhining red colour; the throat is of a blackiſh brown; the upper part of the neck is adorned with long yellow feathers, which have the ſplendor and poliſh of gold; the back appears as if gilt; the under part of the neck and belly are of a blueiſh-green, with a ſilky gloſs; the ſhort coverts of the wings are of a blackiſh brown, mixed with yellow; the large feathers of the wings are of a yellow or pine tinge, and thoſe on the edges of the wings have blackiſh brown extremities; the vent and tail are browniſh; and the feet and bill are yellow. From the middle of the tail ſpring two filaments, twice the length of the bird, furniſhed on their exterior ſides with ſmall, fine, and almoſt imperceptible webs, of a greeniſh colour and moſt beautiful poliſh.

Bird of Paradise, Green. The characters of this bird are the ſame with the reſt of the genus, except that the appendages, or long criſped feathers, ſpring from under the wings. It is ſomewhat longer and thicker than the common dove, and is entirely of a beautiful green colour, uncommonly brilliant and gloſſy. The feathers on the head, neck, and body, are ſhort, and arranged like ſcales one over the other; the feet and bill are blackiſh; and the irides are red. This creature appears of different ſhades, according to the light in which it is viewed; ſometimes green, and at others blue.

BISCIA. A name ſometimes given to the acus, or tobacco-pipe fiſh; or, as it is frequently called, the needle or trumpet-fiſh.

BISHOP. The name of a very muſical bird of Louiſiana; the ſong of which, ſome naturaliſts tell us, continues for the ſpace of a *miſerere*, or forty minutes, during all which time it does not appear to breathe: it is then ſilent twice as long before it renews it's ſtrain; ſo that the alternative of ſong and reſt, according to theſe writers, continues two hours.

BISON. This animal, which is called ſuber by the Lithuanians, and wiſent by the Germans, is unqueſtionably a variety of the cow-kind, diſtinguiſhed from the reſt by a lump between it's ſhoulders. Some of theſe creatures are very large, and others as diminutively ſmall. In general, the fore-parts of this quadruped ſomewhat reſemble thoſe of the lion, having a long ſhaggy mane, and a beard under the chin; the head is ſmall; the eyes are red and fiery; the looks are furious and commanding; the forehead is extenſive; and the horns are placed very far aſunder. A bunch, almoſt as high as that of a camel, grows on the middle of the back, which is eſteemed a peculiar delicacy by the inhabitants of thoſe countries where the animal is found in a wild ſtate. There is no purſuing the Biſon with ſafety, except in foreſts where there are trees large enough to conceal the hunters from it's view. It is generally taken by means of a pit-fall: in order to which, the inhabitants dig a hole in the ground, and cover it with graſs and boughs of trees; after which, provoking the animal to purſue them, they get on the oppoſite ſide of the pit-fall; while the enraged creature, running with great violence towards them, falls into the trap prepared for it, and is quickly overpowered and ſlain.

Biſons are found in all the ſouthern parts of the world; throughout the vaſt continent of India, and from Mount Atlas to the Cape of Good Hope in Africa. They have ſoft ſmooth hair; are very fleet; and in ſome meaſure ſupply the want of horſes. In a domeſtic ſtate, they are remarkably expert and docile, many of them ſpontaneouſly bending their knees, in order to take up or depoſit their burdens. They are treated by the natives of thoſe countries with a degree of tenderneſs proportioned to their utility; and the reſpect for them in India has even degenerated into blind veneration. Theſe animals are alſo highly eſteemed by the Hottentots: they are the companions of their pleaſures and fatigues; and are conſidered by them as their protectors and ſervants, as they aſſiſt them in attending their flocks, and guard them againſt every invader. While the ſheep are grazing, the faithful backely (as the Biſon is here called) ſtands or grazes before them: ſtill, however, attentive to his maſter's looks, he flies round the fields, obliges the flocks to keep within proper limits, and ſhews no mercy either to robbers or ſtrangers.

But the Biſons are not only taught to combat the ſpoilers of their maſters flocks, but even the enemies of their nation; and, accordingly, every Hottentot army is furniſhed with a proper herd of them, which is let looſe againſt the enemy on convenient occaſions. Theſe creatures, when liberated, overturn all before them; ſtriking down their opponents with their horns, and trampling on them with their feet: thus they frequently procure their owners an eaſy victory before they themſelves have had an opportunity of ſtriking a blow. Animals ſo ſerviceable cannot be ſuppoſed to go unrewarded: the Biſons and their maſters occupy the ſame cottage; and by degrees the creatures conceive an affection for them; while, in proportion as the man approaches to the brute, the brute ſeems to acquire almoſt human ſagacity.

The Biſons, or hunched cows, differ greatly from each other in the ſeveral parts of the world. The wild ones arrive at greater magnitudes than the tame: ſome have horns, and others are without any; in ſome they are depreſſed, while in others they are raiſed in ſuch a manner as to be adapted either for weapons of defence or annoyance. All of them, however, when tamed, are equally docile and gentle. Thoſe of Malabar, Abyſſinia, and Madagaſcar, are extremely large; but thoſe of Arabia Petræa, and moſt parts of Africa, are ſmall.

The American Biſon differs from that of the ancient continent in ſeveral particulars: it is larger than the ox; has low, black, ſhort horns, with a large beard under it's chin; and the hair ſpringing from between it's horns falls over it's eyes, and gives it a frightful appearance. It has a bunch on it's back, which begins at the haunches, and gradually increaſes till it arrives at the ſhoulders: the firſt rib before is half a yard higher than thoſe on the back, and is three inches broad. The whole bunch is covered with long reddiſh hair; and the reſt of the body with a ſort of black wool which

is much valued. The breaſt is large; the buttocks are narrow; the neck and tail are very ſhort; and the head is diſproportionably big.

Theſe animals have ſo quick a ſenſe of ſmelling, that it is very difficult for either men or dogs to get near them, except on the leeward ſide; and they are ſo extremely timid, that a whole herd of them will fly from a ſingle dog: when wounded, however, they become very furious, and turn on the hunters with determined reſolution. The fleſh of the females is excellent; and the ſkins of both ſexes are peculiarly valuable.

In the weſtern parts of New France, on this ſide the Miſſiſſippi, the hunting of theſe beaſts forms a favourite diverſion: the hunters, after ranging themſelves in four lines, forming a very large ſquare, begin to ſet fire to the graſs, which at the hunting ſeaſon is uſually very dry and long. As the fire runs along the lines, they advance cloſer together; and the Biſons, who are extremely afraid of that element, ſpeedily fly from it, and get into a cloſe body: on which the natives attack them very briſkly, and ſeldom ſuffer any to eſcape.

In Carolina numbers of theſe creatures are brought up tame: notwithſtanding which, ſome of them ſtill retain their wild diſpoſition; for they cannot long be confined within any fences, but frequently eſcape, and ravage the fields; and, wherever they penetrate, draw the whole tame herd after them.

Linnæus calls the Biſon a beeve with horns turned upwards, a hunch-back, and a very long mane and beard. The tongue of this animal is ſaid to be as rough as a file; with which if it ſhould happen to touch a man's cloaths, it ſeldom fails to get him in it's power, and to tear him to pieces. But the Biſon ſeems to have a natural averſion to red; and accordingly, if it meets with a piece of cloth of that colour, it never leaves it till it's hue is entirely defaced.

BITTACUS. A name given by Cteſias, and ſome others of the Greek writers, to the parrot. It ſeems to be a corruption of pſittacus, for which it is indiſcriminately uſed.

BITTERN. A bird of the heron kind, called by ſome naturaliſts the ardea ſtellaris; and, by others, taurus botaurus, butorius, and ocnus: in Engliſh, the butter-bump and mire-drum.

This bird is diſtinguiſhed from all others by it's diſmal hollow noiſe; of which it is impoſſible to convey an adequate idea in words to thoſe who have never had an opportunity of hearing it: it is ſomewhat like the interrupted bellowing of a bull, but more hollow and loud; and is ſometimes heard, at the diſtance of a mile, as if proceeding from ſome formidable being reſident at the bottom of deep waters. The bird, however, which utters this terrific ſound, is not ſo large as the heron; the bill is alſo weaker, and only four inches long; the upper mandible is a little arched, the edges of the lower being jagged; the irides next to the pupil are yellow, and above the yellow they incline to hazel; the eyes are ſituated extremely low towards the bill; and the ears are large and open. The crown of the head is black, the feathers on the hind-part forming a kind of ſhort pendent creſt; the plumage is of a very pale dull yellow, ſpotted and barred with black; the greater coverts of the wings, the quill-feathers, and the baſtard wings, are of a bright ferruginous colour, regularly marked with black bars; the lower belly is of a whitiſh yellow; and the tail is very ſhort, conſiſting only of ten feathers, of the ſame colour as the wings. The feathers on the breaſt are very long, and hang looſe; the legs are of a pale green; the claws are long and ſlender, the inſide of the middle claw being finely ſerrated, to enable the bird to hold it's prey; and the hind claw, which is remarkably long, and is a ſuppoſed preſervative for the teeth, is ſometimes ſet in ſilver, and uſed as a tooth-pick.

The Bittern is a very ſolitary bird: it's bellowings are chiefly heard from the beginning of ſpring to the end of autumn; and however dreadful they may ſeem to us, they are probably either the calls of courtſhip, or the expreſſions of connubial felicity. From the loudneſs and ſolemnity of it's note, many have been induced to ſuppoſe that the creature makes uſe of external inſtruments to produce it, and that ſo ſmall a body is incapable of ſuch ſonorous exertions. The vulgar are of opinion, that it thruſts it's bill into a reed, which ſerves as a pipe for ſwelling the note above it's natural pitch; while others imagine that the Bittern immerges it's head in water, and then produces it's boomings by blowing with all it's might. But, after all, it is evident that the wind-pipe of this creature is fitted to produce the ſounds for which it is remarkable; and that it is often heard in ſituations where there are neither reeds nor water to aſſiſt it. It conceals itſelf in the ſedges by day, and begins it's call in the evening, booming ſix or eight times; and, after a ſilence of ſome minutes, renewing it's ſtrains. When it's retreats among the ſedges are invaded, as well as when it dreads the approach of an enemy, it is perfectly ſilent; and, while in a ſtate of domeſtic captivity, it remains a mute, forlorn bird, equally incapable of attachment and inſtruction. But though it's bellowings are always performed in ſolitude, it has another kind of ſcream, which it generally uſes when in the act of ſeizing it's prey, and to which it is ſometimes impelled by fear.

This bird, though of the heron kind, is neither ſo deſtructive nor ſo voracious. It is a retired, timid animal, ſubſiſting principally on frogs, inſects, and vegetables; and though it greatly reſembles the heron in it's form, differs eſſentially from that bird in it's manners and appetites. The heron inhabits the tops of the higheſt trees; the Bittern forms it's neſt either in a ſedgy margin, or amidſt a tuft of ruſhes. The heron builds it's habitation with ſticks; the ſimpler one of the Bittern is compoſed of ſedges, the leaves of water-plants, and dry ruſhes. The heron feeds it's young for many days; the Bittern, after three days, leads them abroad in ſearch of their food. In ſhort, the heron is lean and cadaverous, and ſubſiſts chiefly on animal food; while the Bittern is plump and fleſhy, and feeds on vegetables when more nutritious aliment cannot be found.

With whatever terror the voice of the Bittern inſpires the ſimple, it's fleſh is greatly eſteemed among the luxurious: for which reaſon, it is as eagerly ſought after by the fowler, as ſhunned by the peaſant; and, as it is a heavy-riſing, ſlow-winged bird, it does not often eſcape him. Indeed, it ſeldom riſes till almoſt trod upon, and ſeems to ſeek protection rather from concealment than flight. At the latter end of autumn, however, towards evening, it appears to throw off it's wonted indolence; and is then ſeen riſing in a ſpiral aſcent till it gets above human ſight; making at the ſame time a very ſingular noiſe, altogether different from it's former boomings. Thus the ſame animal is often known to aſſume different habits: and while the Latins

BRITISH
9 MR 1967
MUSEUM

1. BRAZILIAN BITTERN. 2. LITTLE BROWN BITTERN. 3. NORTH-AMERICAN BITTERN.

4. BIVALVES.

Plate XXVI. Published as the Act directs, by Harrison & Co. April 16, 1785.

BRITISH
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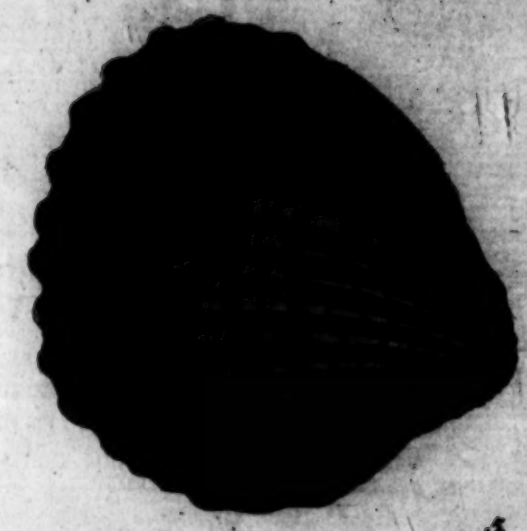
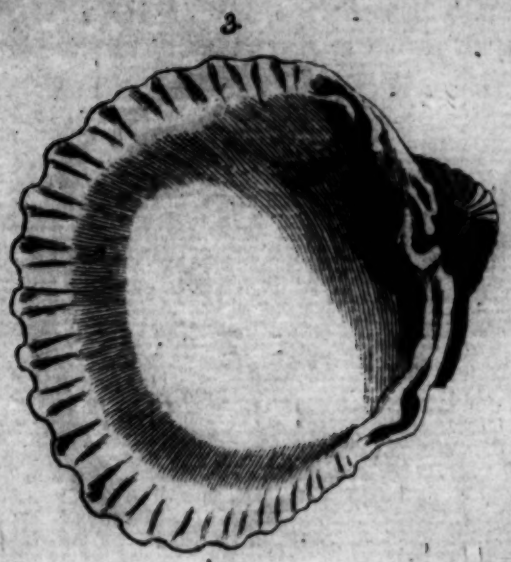
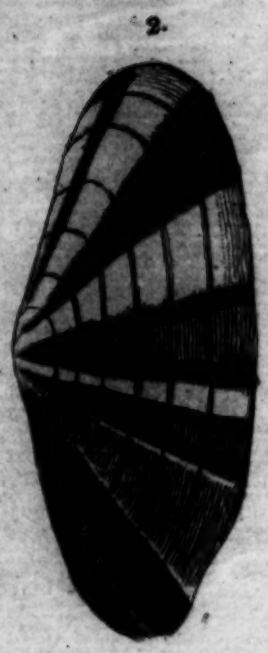
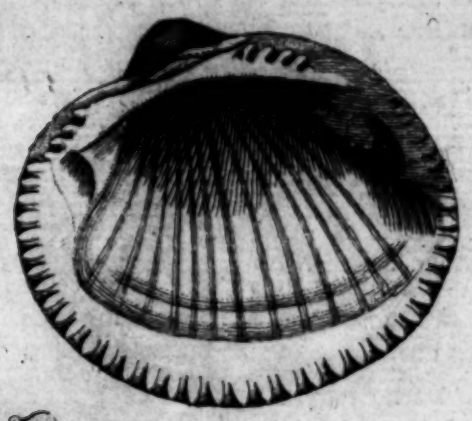
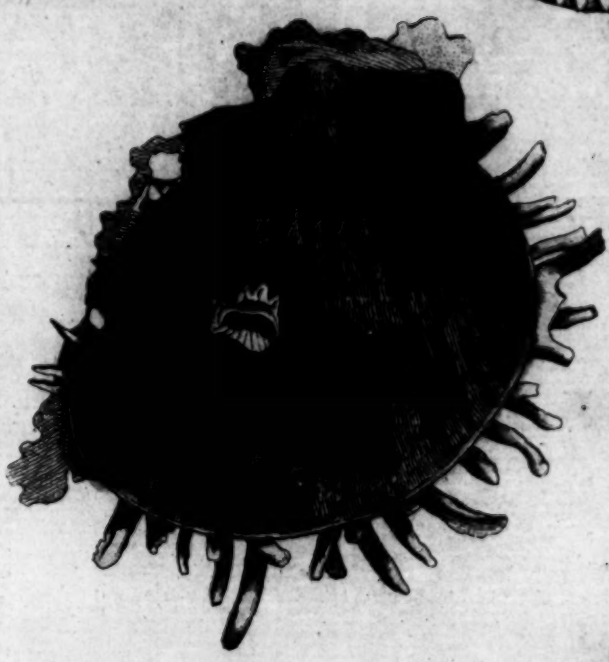










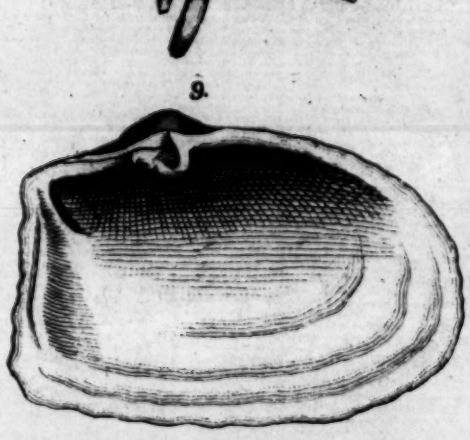


PLATE II. BIVALVES.

1. SOLEN, OR RAZOR SHELL.
2. TELLEN.
3. HEART COCKLE.
4. MULTARTICULATE COCKLE.
5. TRUNCATED COCKLE.
6. PEARL OYSTER.
7. SPONDYLE.
8. HINGE OYSTER.
9. CHAMA, OR GAPER.
10. COMMON OYSTER.
11. PELLUCID OYSTER.

Plate IV.

Published as the Act directs, by Harrison & Co. Feb. 20, 1787.

Moses Harris del. et sculp.

have given the Bittern the name of the ſtar-reaching bird, or the ſtellaris; the Greeks, taking it's character from it's more conſtant habits, have given it the title of the oknos, or the lazy.

Bittern, Small. This ſpecies is about fourteen inches long, and twenty broad. The bill is ſurrounded at the baſe, and above the eyes, with a yellow naked membrane, extending as far as the noſtrils; the bill itſelf is two inches long, and ſharp at the point; the upper mandible is black, and the lower yellow. The neck is five inches long, and conſiderably curvated; the feathers on the top of the head are brown, riſing a little in the manner of a tuft; the upper part of the neck is of the ſame colour, as well as the back, wings, and tail, excepting a few whitiſh and tawny ſpots; the chin, the lower part of the neck, the breaſt, and the belly, are of a light brown, mixed with white and ruddy colours; the tail is about an inch long; and the legs, which are four inches, are of a dark brown before, and yellow behind.

Bittern, Brazilian. The bill of this ſpecies is black towards the end, and yellowiſh at the baſe; the head, and upper part of the neck, are ferruginous, ſtreaked with black; the feathers on the lower part of the neck are long and looſe like thoſe of the common Bittern, the upper parts of them being ruſt-coloured, and the lower white ſpotted with black. The back, the coverts of the wings, and the ſecondaries, are barred with black and ferruginous; the breaſt and belly are white in the middle, and barred with black on the ſides; the tail is barred with black and white; and the legs are of a yellowiſh brown. This Bird is a native of South America; and is eſteemed very excellent food, eſpecially when young. The Brazilians lay wait for them among the ſedges, where they ſhoot them in great numbers.

Bittern, Little Brazilian. This bird is ſomewhat leſs than a pigeon; but the neck is ſeven inches long. At the baſe of the bill the ſkin is of a yellowiſh colour; and the upper part of the head is of a ſteel colour, interſperſed with paliſh brown feathers. The whole neck, breaſt, and belly, are covered with white and aſh-coloured feathers; but the back is partly black, and partly of a dark ſteel colour, mixed with ſome feathers of a cereous hue. The long feathers of the wings are greeniſh, terminating with white ſpots; and the other parts above are beautifully variegated with ſteel, brown, yellow, and aſh colours. The legs, as far as the middle, are naked; the feet are of a bloſſom colour; and the irides are of a bright yellow.

Bittern, North American. This ſpecies is ſomewhat leſs than the Engliſh Bittern; the wings, when cloſed, being under twelve inches. The bill is ſtraight, leſſening gradually to a point; the top of the upper mandible, as well as the point of the bill, is black; the edges of the upper, and a conſiderable part of the lower mandible, are yellow; and between the noſtrils and the eyes there is a naked yellow ſkin. The top of the head is covered with longiſh, ſoft, black feathers; the ſides of the head with reddiſh; the under part with white feathers; and the neck with long ſlender feathers, partly brown and partly white, ſpotted with reddiſh brown. The back, rump, tail, and coverts of the wings, are of a bright reddiſh brown, variegated with a mixture of tranſverſe black lines. The firſt prime quills are wholly black; thoſe next them are black, with reddiſh tips; and the remainder are reddiſh and black. The belly, thighs, and covert-feathers under the tail, are whitiſh, the belly and thighs being marked with oblong ſpots of black; the legs are bare above the knees; the toes are pretty ſtrong, the middle claw being ſerrated, and the hinder one very long; the middle and exterior toes are joined a little way up by a ſkin or membrane; and both the legs and feet are covered with yellow ſcales. This bird is frequently found about Hudſon's Bay.

Bittern, Little Brown. This ſpecies is about the ſize of the lapwing. The wings, when cloſed, meaſure ſix inches; and the bill, which is formed like all others of the ardea kind, is about two inches and a half from the point to the angles of the mouth. Between the bill and the eyes the ſkin is bare, as in the common Bittern; the top of the head is black; and on each ſide of the head there is a black line proceeding from the angles of the mouth: the neck is covered with long, looſe, reddiſh brown feathers, lighter before, and darker behind; the back is covered with reddiſh brown feathers, the middles of which are black; and the belly and thighs with light brown feathers of a looſe texture, having long narrow black ſpots down their middles. The wings are of a reddiſh brown colour, lighter than the back; the leſſer coverts are ſpotted like the back; but the next coverts above the quills, as well as the quills neareſt the back, are brown, with a very ſlight tinge of black: the greater quills, and the tail-feathers, are black; the pinion which covers the bottoms of the greater quills is alſo black; the covert-feathers in the inſides of the wings, the lower belly, and the coverts beneath the tail, are white; the inſides of the quills, and the under-ſides of the tail-feathers, are cinereous; the legs and feet are of a greeniſh colour; the exterior toe is connected to the middle by a membrane at it's bottom; and the middle claw is pectinated at one of it's edges. This bird is a native of the country near Aleppo.

Dr. Shaw, in his travels to Barbary and the Levant, deſcribes another ſpecies of Little Bittern, called by the Moors boo-onk; that is, long neck. It is ſomewhat leſs than the lapwing: the neck, the breaſt, and the belly, are of a light yellow colour; the back, and the upper parts of the wings, are of a jetty black; the tail is ſhort; the feathers of the neck are long, and ſtreaked with white or light yellow; the bill, which is green, meaſures about three inches; the legs, which are of the ſame colour, are ſhort and ſlender; and, in walking, or ſearching for it's food, the bird is capable of throwing out it's neck ſeven or eight inches. It is, however, very probable that this ſpecies is only a ſlight variation of the former, or perhaps the ſame bird of a different age or ſex.

BIVALVE. A claſs of ſhells compoſed of two pieces or parts; which, by means of a proper connection by hinges, play on each other, ſo as to open, ſhut, and perform all other functions neceſſary to the œconomy or modes of life of the animals included in them.

Bivalves may be arranged into three general parts; namely, ſuch ſhells as have unequal valves, and ſhut cloſe, as the eſcallops, oyſters, anomiæ, &c. ſuch as have equal valves, and ſhut cloſe, as the cockles, tellens, muſcles, &c. and, laſtly, ſuch as have valves which never ſhut cloſe, but are always open, or gaping, in ſome parts, as the baſon conques, or bear's paws, the chamæ, pinnæ, ſolens, &c.

Such are the diſtributions offered by that very accurat

accurate conchologist Dicoſtes Linnæus, however, divides all Bivalves into fourteen families, which he characterizes by the peculiar formation of their hinges in a very ſcientific manner.

The ſpecies of Bivalves are very few when compared to the immenſe varieties of univalves; nor are they comparable to them in beauty: and farther, there are no land Bivalves, and few of freſh water; whereas the ſpecies of land univalves are extremely numerous, and many kinds alſo occur in the freſh water.

BLACKBIRD. A well-known bird, though of a retired and ſolitary nature, and the deepeſt-toned warbler of the woods. From the tip of the bill to the extremity of the tail is near eleven inches; the bill is an inch long, and of a yellowiſh ſaffron colour; but in the female the point and upper-part are blackiſh; and the inſide of the mouth is yellow in both ſexes, as well as the circumference of the eye-lids. There are twenty-eight large feathers in each wing, of which the fourth is the longeſt: the tail is four inches and a half long; and conſiſts of twelve feathers of equal lengths, except the laſt on each ſide, which is ſomewhat longer than the reſt. The feet are black; and the exterior and poſterior toes are equal, the firſt being joined to the middlemoſt in it's lower part.

The plumage of the male Blackbird is of a coal-black colour, but that of the female of a brown or dark ruſſet: however, when the former is young, it is rather brown than black, and has a reddiſh creſt, and a greyiſh belly; ſo that it is not eaſily diſtinguiſhed from the latter before it is a year old, and then the colour becomes fixed. The liver of this bird is divided into two lobes, of which the right is the biggeſt: it has alſo a gall-bladder; but the ſtomach is not ſo muſcular as in other birds of this kind.

The note of the Blackbird, during the ſpring and ſummer ſeaſons, when heard at a diſtance, is perhaps the moſt pleaſing of all the ſongſters of the grove; but, when the bird is confined in a cage, it's ſong is rather unpleaſant, being loud and deafening. It may be taught, however, to whiſtle any tune, and even to imitate the human voice. It builds it's neſt with a conſiderable degree of art, lining the inſide with hair and other ſoft materials; and the female lays four or five blueiſh eggs ſprinkled with brown ſpots. In ſome very cold countries, and particularly on the Alps, Blackbirds are found of a pure white colour; but they are by no means numerous, and are therefore regarded as curioſities when imported into Britain.

If young Blackbirds be taken from their neſts at the age of twelve days, they may generally be reared with great facility, care being taken to keep them clean, and to feed them with lean freſh meat cut very ſmall, and mixed with a little moiſtened bread.

Blackbirds, even in a ſtate of bondage, are uſually very healthy; but when they begin to droop, it is proper to give them two or three houſe-ſpiders, with a little cochineal in their water. Theſe birds are extremely ambitious of pluming their feathers; and therefore, when grown up, they ſhould always be ſupplied with plenty of water.

BLACKBIRD, RED-BREASTED. This very curious bird is a native of Surinam, and is ſuppoſed to be the ſame with that deſcribed by Marcgrave under the appellation of the jacupu. The ſtructure of the bill is very extraordinary, the lower mandible reaching very far into the ſides of the head, and being conſiderably broader and thicker at the baſe than the upper mandible. The bill is of a black or duſky colour, except the broad baſes of the lower mandible, which are of a blueiſh aſh. The whole body is covered with duſky black feathers, without any gloſs, except on the fore-part of the head, the throat, and the beginning of the breaſt, where they are fringed with a fine crimſon colour, externally appearing wholly red, but diminiſhing gradually on the ſides of the breaſt, and on the belly, till wholly loſt in the black. The inſides of the wings are black; the tail is of the ſame colour, of a moderate length, and compoſed of twelve feathers, the middlemoſt being ſomewhat longer than the reſt; and the legs and feet are of the common ſtructure, and of a blackiſh colour.

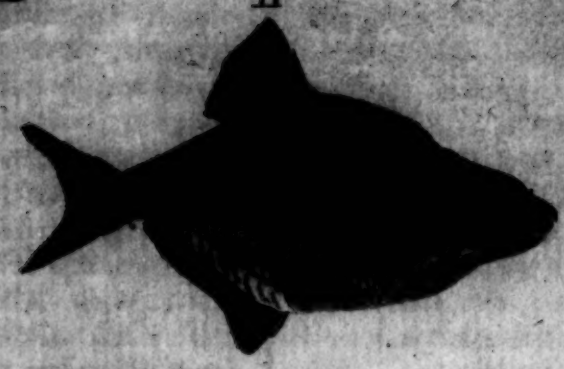
BLACK AND WHITE BIRD, SMALL. This bird, which is a native of Jamaica, is only four inches long from the tip of the bill to the extremity of the tail, and ſeven broad when the wings are extended. The bill is ſtraight, roundiſh, black above, white below, and half an inch long; the tail is an inch and a half long; the upper-part of the body is blackiſh variegated with white lines, the under-part being white, mixed with a ſmall portion of black; the feet are of a greeniſh brown; and the claws are yellowiſh.

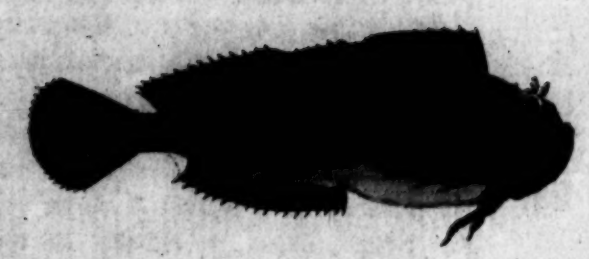
BLACK AND ORANGE BIRD. This ſpecies is likewiſe a native of Jamaica; and meaſures about four inches in length, and ſix in breadth when the wings are expanded. The bill is a quarter of an inch long, and broad at the baſe; and the tail is an inch and a half long. The head, neck, and back, are black, except that on the latter there is a ſlight tincture of orange; the wings and tail are brown, with ſtripes of an orange colour; the breaſt and covert-feathers of the wings are alſo orange; the breaſt is white; and the feet are black. This bird is ſaid to ſubſiſt chiefly on ants.

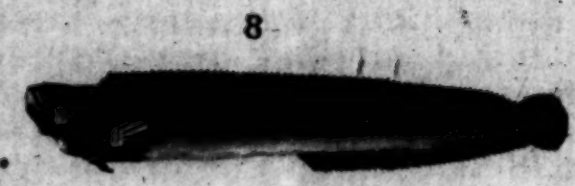
BLACK CAP. A very ſmall bird, ſcarcely weighing half an ounce. The crown of the head, in the male, is black, from whence it derives it's name. The hind-part of the neck is of a light aſh-colour; the back and coverts of the wings are of a greyiſh green; the quill-feathers and tail are duſky, edged with dull green; the breaſt, and the upper part of the belly, are of a pale aſh-colour; the vent-feathers are whitiſh; and the legs are of a leaden hue. The female is diſtinguiſhed from the male by the ſpot on the head, which in the former is of a dull ruſt-colour.

The Black Cap is a bird of paſſage, and leaves the Britiſh Iſles before the commencement of winter: however, during it's ſtay, it gratifies us with it's ſong, which is ſo ſweet, that in Norfolk this bird has obtained the name of the mock-nightingale. It's notes are generally full, ſweet, deep, and loud, but of ſhort continuance; and it's modulations are deſultory: but when the little warbler ſits calmly, and is earneſtly engaged in ſinging, it pours forth very ſweet, but inward melody; and expreſſes a great variety of pleaſant and gentle harmony, ſuperior perhaps to that of any of our ſongſters of the grove, the nightingale excepted.

Orchards and gardens are the favourite retreats of the Black Cap: it generally builds it's neſt in ſome tree or ſhrub at a ſmall diſtance from the ground, and lines it with the fibres of roots thinly covered with black horſe-hair. It commonly lays four or five eggs of a pale reddiſh brown, mottled with a deeper colour, and ſprinkled with a few dark ſpots.







1. COCK BLACKBIRD. 2. RED-BREASTED BLACKBIRD. 3. CEYLONESE BLACK-CAP. 4. BLEAK.
5. CRESTED BLENNY. 6. GATTORUGINE BLENNY. 7. SMOOTH BLENNY. 8. SPOTTED BLENNY.
9. VIVIPAROUS BLENNY. 10. RED-BELLIED BLUE-BIRD. 11. BREAM. 12. BLIND-WORM.

Plate XXIV. Published as the Act directs, by Harrison & Co. April 2. 1785.

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PRINCETON

BLACK-CAP, CEYLONESE. The bill of this bird is a little bent, and of a blueiſh colour; the crown of the head and hind-part of the neck are black; the back is green; the under ſide of the neck and the entire belly are of a light yellow; the wings are black, with two bars of white; and the tail is of a ruſt-colour.

The name of Black-Cap is likewiſe given by the vulgar in many counties of England to the pewit, a bird of the gull-kind; and it is alſo the common name for the Engliſh parus paluſtris, or marſh-tit-mouſe.

BLACK-GAME. The common appellation for the urogallus, or tetrao minor; called alſo the grouſe.

BLACK-FISH. This fiſh is ſaid to reſemble the ſheat-fiſh in it's ſhape, though not above twenty inches long, and twenty ounces in weight. The head and back are black: and the lateral line runs directly from the head to the tail, through the middle of the ſide; below which, towards the belly, the colour generally changes to a dark purple; of which colour alſo is the under part of the head. The head is flat, and near five inches long; the body is round, till within a ſhort ſpace of the tail, where it becomes compreſſed; the mouth, which is rather ſmall, is deſtitute of a tongue; the eyes are placed near the corners of the mouth, on the lower edge of the upper jaw; and there are four gills on each ſide, armed with a double row of ſharp points, in a pectinated form. Near the gills there are two fins, conſiſting of ſeven rays; and a pretty ſtrong prickly bone is connected to the fore-part. About an inch above the vent, there are two ſmaller fins; and another of conſiderable length extends from the vent to the tail. There is likewiſe another of the ſame kind that runs from the neck all along the back; but neither of theſe fins are united to the tail. The Black-Fiſh is caught in the River Orontes; and it is conſtantly and plentifully expoſed to ſale in the markets of Aleppo from November till the beginning of March. The fleſh, which is extremely red, has a rank, ſtrong taſte.

BLANK. An appellation given by ſome authors to a ſpecies of the cod-fiſh, called gelbe, kolmulen, and aſellus flaveſcens.

BLATTA. A genus of inſects of the order of hemiptera in the Linnæan ſyſtem: the characters of which are, that the head is inclined; the antennæ are ſetaceous; the wings are membranaceous; the thorax is flat, orbiculated, and marginated; the feet are formed for running; and there are two ſmall horns above the tail. There are ſeveral ſpecies belonging to this genus.

Blatta is likewiſe the name of a ſpecies of beetle, called by Columna ſcarabæus teſtudinatus, and conſiſting of ſeveral varieties.

The word Blatta, according to ſome writers, was alſo uſed for the kermes inſect; and, in the opinion of others, for the purple worm: but both theſe acceptations are liable to ſuſpicion.

BLATTA, COMMON. See BEETLE, MILL.

BLATTA, YELLOW. This ſpecies of ſcarabæus is ſomewhat larger than the common fly. The ſhield which covers the breaſt is membranaceous, of an oval ſhape, and marginated; the caſes of the wings are membranaceous and tranſparent, and of a browniſh colour, with raiſed ſtreaks marked with black ſpots: the legs are prickly, reſembling horns; the feelers are long; and there are two articulated horns, or prickles, above the vent. This ſpecies is a native of Lapland; for which reaſon it is called by Linnæus the Lapland Blatta.

BLATTA, AMERICAN; or, COCK-ROACH. Theſe inſects, which are of a reddiſh brown colour, are extremely deſtructive and voracious. They herd together in ſuch numbers, that it is almoſt impoſſible to keep victuals of any kind from their ravages; and they even eat leather, linen, and paper. They diſappear on the approach of winter, but return towards the ſummer; and chiefly commit their devaſtations in the night-time. Theſe Blattas lay their eggs in heaps, and wrap them all round in bags or webs, after the manner of ſome ſpiders. When the eggs are hatched, the young ones appear quite perfect, and leave their ſhells almoſt inſtantaneouſly. Being at firſt no larger than ants, they are capable of penetrating through the ſmalleſt apertures into boxes and cheſts, where they gnaw and deſtroy every thing within their reach. They have two very long horns or feelers; ſix hairy legs, with two claws, reſembling forks, at their ends; and their heads, which are black, have reddiſh circles on their upper parts. When arrived at their full growth, they caſt their ſkins, which burſt on their backs; and then the Blattas, or Cock-Roaches, are perfectly formed. Their wings are ſoft and tender, being whitiſh at firſt, and afterwards of a reddiſh colour; but their heads, horns, and the reſt of their bodies, retain the ſame ſhapes and colours as they poſſeſſed before the exuviæ were ſhed.

BLEAK. This very common ſpecies of fiſh, the alburnus cyprinus of Linnæus, is found in many of our rivers. Bleaks generally keep together in large ſhoals; and, at certain ſeaſons, they appear to be in great agonies, tumbling about near the ſurface of the water, as if incapable of ſwimming to any conſiderable diſtance: but in a ſhort time they recover, and preſently diſappear. They ſeem to be troubled with a ſpecies of gordius, or hair-worm, of the ſame kind as thoſe worms with which Ariſtotle tells us the ballerus and tillo are infeſted; and which torment them to ſuch a degree, that they frequently riſe to the ſurface of the water, and expire.

Bleaks ſeldom exceed five or ſix inches in length. Their bodies are ſlender, conſiderably compreſſed ſideways, and not very diſſimilar to ſprats. Their eyes are large; their irides are of a pale yellow: their under jaws are long; their lateral lines are crooked; their gills, ſides, and belly, are ſilvery; their backs are green; their fins are pellucid; their ſcales are deciduous; and their tails are much forked. Their fry, or young, during the month of July, appear in aſtoniſhing multitudes in the River Thames near Blackwall; and are known in London and it's vicinity by the name of white-bait.

Artificial pearls are made with the ſcales of the Bleak, after the following manner. Being removed from the fiſh, artiſts immerge them in a baſon containing a little water, and then rub them againſt the bottom, as if they were grinding colours. This being done, they pour off the ſilver-coloured water into a glaſs, leaving the ſcales at the bottom of the baſon; and then repeat the operation till nothing comes off, always pouring the water into other glaſſes. They then let it ſettle for ten or twelve hours, during which time the ſilvery matter ſinks to the bottom; and then pouring off the water by a gentle inclination, that which remains is of the conſiſtence of oil, and of the colour of pearls: this they mix with iſinglaſs, or fiſh-glue, and with it varniſh any ſort of ſubſtance of the ſize of beads, particularly wax, alabaſter, and glaſs; all which, after this operation, have the exact appearance of

pearls. But as theſe artificial pearls are not proof againſt moiſture, workmen have a method of lining the inſides of glaſs beads with the fluid, blowing in a little of it with a ſmall pipe, and ſhaking it about till it fixes all over the internal ſurface. This being done, they throw them into a baſket, and ſhake them together till they become quite dry; after which, in order to render them the more ſolid, they line them with wax. This is the genuine method of making the true French necklaces; the manufacture of which employs great numbers of that ingenious people.

BLENNY, or BLENNIUS. A genus of fiſh of the general order of acanthopterygii, according to the diſtribution of Artedi; and of the jugulares in the Linnæan ſyſtem. The characters of this genus are, that the membrane of the gills has ſix bones; that the fore-part of the head is very ſloping; that the body is ſmooth and ſlippery; that the teeth are ſlender; and that the ventral fins generally conſiſt of two united rays.

Blenny, Crested. This ſpecies is ſometimes found on the ſhores of the Britiſh Iſles, and is commonly about four or five inches long. On the head there is a ſmall creſt-like fin, which the fiſh is capable of erecting or depreſſing at pleaſure; on the top of the head, between the eyes, there is a triangular prominence pointing backwards, and red about it's edges: the ſkin at the angle of the upper jaw is looſe, and projecting; the dorſal fin extends from the hind part of the head almoſt to the tail; the ventral fin is ſmall; the vent is ſituated under the ends of the pectoral fins; the body is ſmooth and ſlippery; and the colour is brown, and maculated.

Blenny, Gattorugine. This curious ſpecies is ſeven inches and a half long. The body is ſmooth, and compreſſed on the ſides; the belly is a little prominent; and the vent is ſituated as in the creſted Blenny. The teeth are ſo extremely ſlender and thick ſet, that they appear almoſt ſetaceous: between the eyes there is a ſlight depreſſion; and above each, exactly on the ſummit, there is a narrow looſe membrane, trifurcated at the top, the diſtinguiſhing mark of the ſpecies. The pectoral fins, which are broad and rounded, conſiſt of fourteen rays, extending beyond the webs, and giving a ſcolloped appearance to the edges; the ventral fins are like thoſe of others of the genus; the dorſal fin conſiſts of fourteen ſtrong ſpiny rays, and nineteen ſoft rays, the laſt of which are the higheſt; the anal fin hath twenty-one rays, the ends in every fin extending beyond their webs; and the tail, which is rounded at the extremity, conſiſts of twelve rays, divided towards their extremities. The colour of this ſpecies is duſky, marked acroſs with wavy lines; the belly is of a light cinereous hue; and the lower part of the pectoral fins, as well as the extremities of the ventral fins, are of an orange colour.

Blenny, Smooth. This very active and vivacious ſpecies frequents the rocky coaſts of Angleſea; and, by the aſſiſtance of it's ventral fins, creeps up between the ſtones with great facility after the ebb has left them. It ſeems to ſubſiſt on ſhells and ſmall crabs; and is ſo very tenacious of life, that it will live near a day out of the water. The general length of this fiſh is about five inches; the head is large, and ſloping ſuddenly to the mouth; the irides are red; the teeth, which are ſlender, ſharp, and cloſe ſet, conſiſt of twenty-four in the ſuperior, and nineteen in the inferior jaw; the pectoral fins are broad and rounded, and compoſed of thirteen rays; and the ventral fins of no more than two thick rays, ſeparated near the ends: the dorſal fin conſiſts of thirty-two ſoft rays, and reaches from the hind-part of the head almoſt to the extremity of the tail. The vent is placed in the middle of the body; the anal fin extends almoſt to the tail, and conſiſts of nineteen rays, tipped with white; and the tail is rounded at the extremity, and compoſed of twelve branched rays. The colour of this ſpecies varies conſiderably: in ſome it is quite black; in others, a deep olive, delightfully marbled with a ſtill deeper colour; and others are ſpotted with white, ſometimes diſpoſed in rows above and beneath the lateral line.

Blenny, Spotted. This fiſh is about ſix inches long. The ſides are extremely compreſſed, and very thin; the head and mouth are ſmall, the laſt pointing upwards, and the lower jaw ſloping conſiderably towards the throat: the teeth are ſmall; and the irides are of a whitiſh colour. The pectoral fins are rounded, and yellowiſh; and, inſtead of ventral fins, it has two minute ſpines; the dorſal fin conſiſts of ſeventy-eight ſhort ſpiny rays, running almoſt the entire length of the back: on the top of the back there are eleven round ſpots, which reach the lower half of the dorſal fin; theſe ſpots are black, and half encircled with white. The vent is placed in the middle of the body; and the anal fin extends from it almoſt to the tail. The back and ſides are of a deep olive colour; the belly is whitiſh; and the tail is of a yellow hue, and rounded at the extremity. This ſpecies likewiſe frequents the coaſts of Angleſea, and is uſed as a bait for larger fiſh.

Blenny, Viviparous. This remarkable ſpecies was firſt diſcovered by Schonevelde, and afterwards found by that ingenious naturaliſt, Sir Robert Sibbald, on the coaſts of Scotland. Theſe fiſh generally bring forth two or three hundred young at a time. Their ſeaſon of parturition is very early in the ſpring; and before midſummer they quit the bays and ſhores, and retire into the deep. Their fleſh, which is very coarſe, is uſed only by the poor.

Blennies are common in the River Eſk, as well as at Whitby in Yorkſhire, and ſome other parts of England. They are ſometimes caught of the length of a foot. Their bodies are ſlender; their ſkins are ſmooth and ſlippery; their dorſal fins commence juſt behind their heads, and unite with thoſe of their tails; their pectoral fins are rounded; their ventral fins conſiſt of no more than four ſhort rays each; their anal fins extend far, and unite with their tails; and their tails themſelves are rounded. The tips of their tongues, their chins, throats, and anal fins, are of a fine yellow colour; and their dorſal fins, backs, and ſides, are of a yellowiſh brown, ſtained with duſky lines and ſpots.

BLICEA. A ſmall fiſh of the harengiform kind, commonly caught in the German and other ſeas; and ſuppoſed to be the ſame with the Engliſh ſprat, which ſome naturaliſts regard as the young of the herring.

Blicea is likewiſe the name of a freſh-water fiſh of the malacoſtomous or leather-mouthed kind; ſeemingly the ſame with the more common kind of circaſſius.

Blicea is alſo the name of an Eaſt Indian fiſh, which might more properly be called the harengus minor Indicus, or leſſer Indian herring. It is harengiform in moſt particulars, except that it is ſomewhat more depreſſed, and thinner. It is exactly of the

the ſame colour with the herring; the tail alſo is forked; but the head is of a ſingular figure, the eyes, and the extremity of the ſnout, being extremely large.

This fiſh is principally caught on the Malabar coaſt. It is extremely well taſted; and is cured with greater facility than moſt other Eaſt India fiſh: it is therefore much valued, and ſent into all the neighbouring parts of the country in pickle. The natives alſo uſe it for another very beneficial purpoſe, at thoſe ſeaſons when it is very plentiful, namely, that of manuring land on which rice is intended to be ſown.

BLIEGG. A German appellation for the fiſh uſually called the bleak, the albula and alburna of naturaliſts.

BLIKE. A name ſometimes given to an anadromous fiſh ſomewhat reſembling our river-chub; called by Geſner capito anadromous; but more generally known by the title of zerta.

BLIND. A Comiſh name for the aſellus luſcus, commonly called the bib. It is a fiſh of the cod kind, but never grows to any conſiderable ſize.

BLIND SERPENT. A reptile very common at the Cape of Good Hope, furniſhed with black ſcales, ſpotted with brown, red, and white. It is often found in the clefts of rocks, and ſimilar ſituations, where it is eaſily diſpatched. It does not appear to be very fierce; and it's bite is ſaid to be leſs dangerous than that of moſt other ſerpents.

BLIND-WORM. A very harmleſs reptile, though formidable in appearance. The uſual length of this ſpecies is eleven inches; the irides are red; the head is ſmall; the neck is ſtill more ſlender, and from it the body ſuddenly increaſes, and continues of an equal bulk to the tail, which is blunt at the end. The colour of the back is cinereous, marked with very ſmall lines compoſed of minute black ſpecks; the ſides are of a reddiſh caſt, and the belly is duſky, but both are maculated like the back. The tongue is broad and forked; the teeth are minute and numerous; and the ſcales are ſmall. The motion of this reptile is ſlow; from which circumſtance, as well as from the ſmallneſs of it's eyes, it's names are derived; ſome calling it the ſlow, and others the Blind-Worm. Like all the reſt of the kind in our climates, they lie torpid during the winter, being ſometimes found in vaſt numbers twiſted together. This animal reſembles the viper in bringing forth it's young alive.

Dr. Borlaſe, who mentions a variety of this ſerpent with a pointed tail, tells us, that he was informed that a man loſt his life by the bite of one in Oxfordſhire. It is probable, however, that the informant miſtook the black, or duſky viper, for this kind; for it does not appear that any other reptile in this country can communicate poiſon by it's bite. In Sweden, indeed, there is a ſmall reddiſh ſerpent, called the aſping, the coluber cherſea of Linnæus, the bite of which is ſaid to be mortal: and it is poſſible that this ſpecies, though yet unnoticed by our naturaliſts, is to be met with in ſome parts of Britain; and that it's bite may be attributed to theBlind-Worm.

BLOOD-HOUND. A ſpecies of the canine genus which was highly eſteemed by our anceſtors, who employed it in recovering ſuch game as had either eſcaped from the hunters in a wounded ſtate, or had been killed and ſtolen out of the foreſt. The faculty of ſmelling in this creature was very remarkable: it traced the loſt animal by the blood it had ſpilt; and, with the utmoſt certainty, diſcovered the robber, whoſe footſteps it traced through ſecret and impervious paths at the greateſt diſtance, nor ever deſiſted from the purſuit till it had overtaken him.

During the civil wars in Scotland, Blood-Hounds were employed on various occaſions; and the poetical hiſtorians of thoſe two heroes, Bruce and Wallace, frequently relate very curious anecdotes reſpecting the ſervices rendered by thoſe animals to their maſters, together with their eſcapes from thoſe of their enemies. They were alſo much valued on the confines of Scotland and England, where the inhabitants of the marches were continually preying on the herds and flocks of their neighbours. Hiſtory likewiſe informs us, that King James VI. of Scotland, before he aſcended the Engliſh throne, made uſe of theſe ſagacious animals in diſcovering a race of Cannibals and robbers which had long infeſted the county of Fife; and, ſheltered in a dark cave of conſiderable extent on the ſea-coaſt, had eluded the vigilance of the neighbouring inhabitants for many years.

The genuine Blood-Hound breed was large, ſtrong, muſcular, broad-cheſted, of a ſtern aſpect, of a deep tawny colour, and generally marked with a black ſpot over each eye. This ſpecies, however, ſeems now to be entirely blended with the terrier and harrier; and the ſtock is conſequently loſt.

BLOWING-SNAKE. A name given by the natives of Virginia to a ſpecies of ſerpent very much reſembling the European viper, but conſiderably larger, and very remarkable for inflating and extending the ſurface of it's head before it inflicts it's bite.

BLUE-BIRD. This beautiful animal, as deſcribed by Bellonius, entirely reſembles the black bird, except in it's colour. It inhabits the Alps, and always ſelects the moſt craggy rocks and moſt ſtupendous precipices for it's retreat. Being very rarely caught, it is highly eſteemed even in thoſe countries where it breeds; but ſtill more ſo when carried into foreign lands. It not only ſings moſt delightfully, but is capable of being taught to ſpeak articulately; and is ſo extremely docile and obſervant, that, if waked during the night-time by any of the family to which it is accuſtomed, it will ſpeak and whiſtle at the word of command. About the beginning of winter, it's colour becomes black, and changes again to it's original hue on the firſt approach of ſpring.

The Blue-Birds build their neſts in deep holes in very high and inacceſſible ſolitudes; thereby removing them not only from the reach of man, but alſo hiding them with ſurprizing art from the chamois and other wild beaſts which might annoy their young.

Fowlers are ſaid to catch theſe beautiful birds in the following manner. Having diſcovered where they build their neſts, they take with them ſtrong ſtilts, or ſtakes, ſuch as the climbers of rocks make uſe of to aſſiſt them in their aſcent; by means of which they mount ſuch places as indifferent ſpectators would think impoſſible to be aſcended; at the ſame time covering their heads, in order to ward off any danger from the falling of pebbles or ſtones above them. At length, having arrived at the neſts with extreme toil and labour, they draw them up from the holes in which they are uſually buried, and cheriſh the young with an aſſiduity equal to the pains they take in obtaining them.

The Blue-Bird, for the moſt part, produces five young;

young; it rarely visits the champain country; flies ſwifter than a blackbird, and ſubſiſts on the ſame kind of food.

BLUE-BIRD, RED-BELLIED. This bird is a native of Surinam. The bill is ſlender, ſharp-pointed, of a moderate length, and of a dark lead-colour; the head, neck, breaſt, wings, tail, and the ſuperior part of the back, are of a purpliſh blue, partly very bright, and partly obſcure; but the ſides of the head, the breaſt, and the coverts of the wings, are the brighteſt parts. The upper part of the neck, and the back, are of a dull dirty blue, with a ſlight tinge of green: from the inferior part of the bill, a little way down the throat, it is of a dark blue, or dirty colour; the quills and tail-feathers are of a black or duſky colour, the edges of the feathers being blue. The lower part of the back is of a light colour, with a faint mixture of roſe; the covert-feathers of the tail are of a fine blue purple; the thighs, lower belly, and coverts under the tail, are of a dirty reddiſh orange; and the legs, feet, and claws, are of a dark lead-colour.

BLUE-CAP. A ſpecies of fiſh of the ſalmon kind, diſtinguiſhed by broad blue ſpots on their heads, from whence they receive their name. They are ſuppoſed to breed on ſome foreign coaſt; but appear in our rivers at certain ſeaſons, and particularly after a very violent north wind, when they are generally found in ſhoals.

BOA. An aquatic ſerpent of prodigious magnitude, which follows after herds of oxen, and from that circumſtance receives it's name. It ſucks the teats of the cow; and, in the belly of one of theſe creatures, killed during the reign of the Emperor Claudius, a child is ſaid to have been found almoſt entire. The bite of the Boa is ſaid to be attended with immediate inflammation.

In the Linnæan ſyſtem, Boa is a genus of ſerpents, with abdominal and ſubcaudal ſcuta, and without a rattle.

BOAR. The male of the hog kind.

BOAR, WILD. This animal, which is the original of all the varieties of the hog kind, is neither ſo ſtupid nor ſo filthy as that which is commonly reduced to tameneſs. The body is much ſmaller than that of the tame hog; the ſnout is longer, and the ears, which are black, are rounder and ſhorter. The Wild Boar does not vary in it's colour like the domeſtic kind, being always of an iron-grey, inclining to black. The feet and tail are entirely black; the tuſks are larger than thoſe of the common hog, ſome of them, as Buffon aſſerts, having been found almoſt a foot long; theſe tuſks grow both from the upper and under jaw, bending upwards in a circular direction, and being exceedingly ſharp at the points. The whole litter of pigs follows the ſow the three firſt years; and the family live in one common herd, uniting their forces againſt the wolf, or other beaſts of prey: but no ſooner is the Wild Boar arrived at a ſtate of maturity, than it becomes conſcious of it's own ſtrength, and traverſes the foreſt undaunted and alone; it has then no apprehenſions from any ſingle enemy; diſdains to fly even from man himſelf, nor ever diſcovers the ſmalleſt degree of fear.

The Wild Boar inhabits moſt parts of Europe, except the Britiſh Iſles and the countries north of the Baltic. It is found in Aſia, from Syria to the borders of the Lake Baikal; and, in Africa, on the coaſt of Barbary. But in the foreſts of South America theſe animals roam in prodigious droves, and are extremely beneficial to that country, by clearing it of rattle-ſnakes, which they devour with ſafety. They ſubſiſt chiefly on roots and vegetables; and being ſatisfied with ſuch proviſions as can be procured without danger, they ſeldom attack any other animals: but if any creature happens to die in the foreſt, or is ſo wounded as to be rendered incapable of making reſiſtance, it ſoon becomes the prey of the Wild Boar; for that creature never refuſes animal food, however putrid, if it can be procured without difficulty; and, barring accidents, it generally lives to the age of twenty-five or thirty years. The rutting-time of the female is in December, and continues for about three weeks.

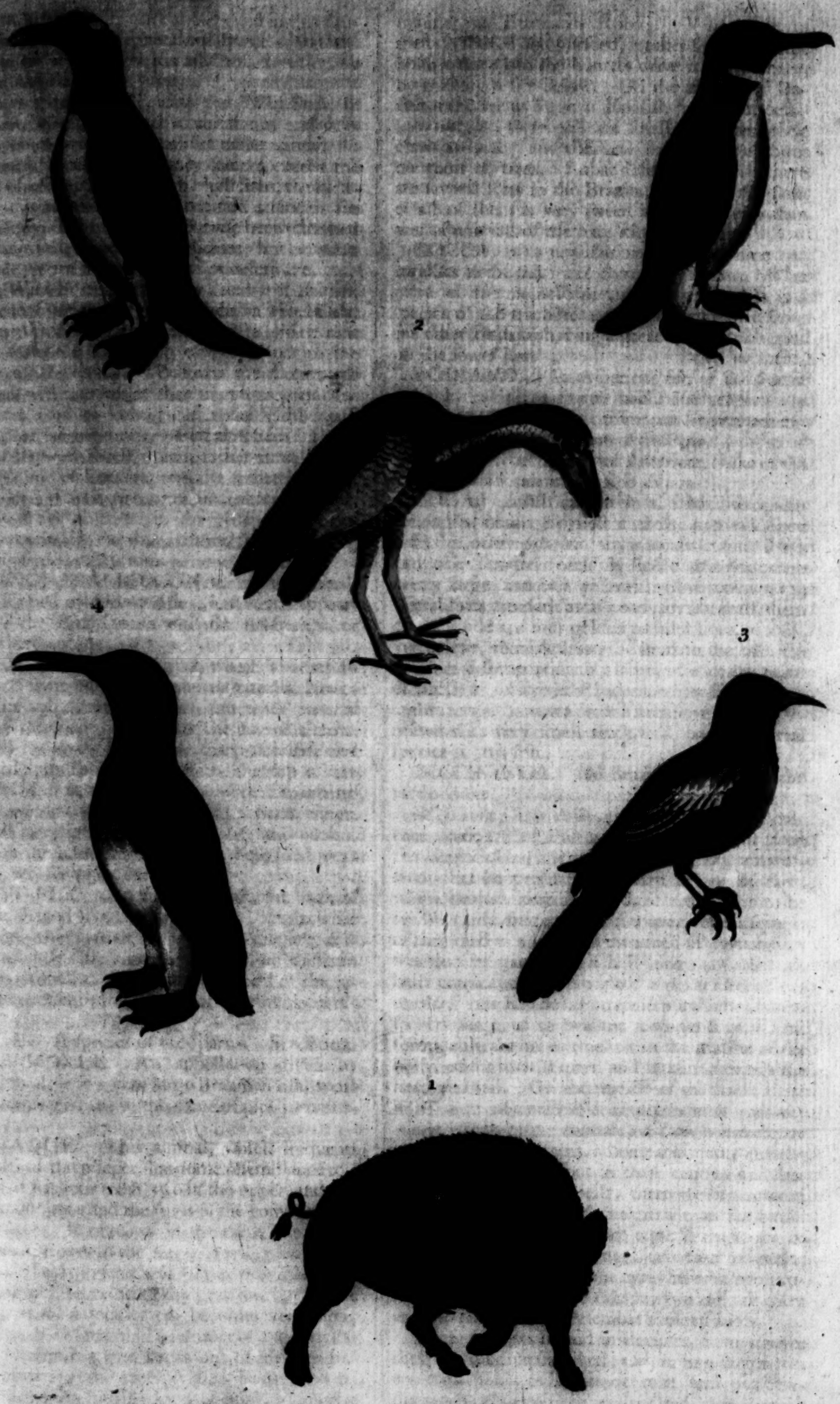
The general places of reſt of theſe animals are among the thickeſt buſhes which they can find. In April and May they ſleep more ſound than during any other months of the year, and are therefore then caught in toils with more facility than at any other ſeaſon.

The Wild Boar, among huntſmen, has ſeveral names, according to its different ages: the firſt year, it is called a pig of the ſaunder; the ſecond, a hog; the third, a hog-ſteer; and the fourth, a Boar.

Hunting Wild Boars is a very favourite diverſion among the nobility of thoſe countries which they inhabit; and the beſt ſeaſon for this purpoſe is between the months of September and December. For this purpoſe ſmall maſtiffs are generally uſed; the hunters being regardleſs of the acuteneſs of their ſmell, as the Wild Boar leaves ſo ſtrong a ſcent, that it is impoſſible for them to miſtake his courſe. When the Boar is driven from his covert, he proceeds ſlowly and regularly, at a ſmall diſtance, before his purſuers, without betraying any ſtrong indications of fear. Once in about half a mile, he turns round, ſtops till the hounds come up to him, and then offers them battle. The dogs, ſenſible of their adverſary's ſtrength, keep off, and bay him at a diſtance. After gazing on each other for ſome time, the Boar proceeds leiſurely on it's courſe, and the dogs renew the purſuit. The chace is thus continued till the creature, being quite weary, refuſes to proceed. The dogs then attempt to cloſe in upon it; and thoſe which are young, and unaccuſtomed to the chace, being generally foremoſt in the attack, are commonly killed. The old experienced hounds wait till the hunters come up, who ſtrike at the Boar with their ſpears, and ſoon diſpatch, or at leaſt diſable it. Great caution, however, is neceſſary in aiming their blows; for this animal is extremely adroit at transfixing them on his ſnout, or tuſks; and, on being only partially wounded, attacks the huntſman in a very furious manner. The moſt vulnerable parts of the animal are either between the eyes, or the ſhoulders; in both which places the wound, if driven home ſufficiently, proves mortal. When the Boar makes at the hunter, his ſafety conſiſts entirely in his courage and addreſs; for, if he flies, he is inevitably overtaken, and deſtroyed. If the beaſt attacks him in a ſtraight direction, it is to be received at the point of the ſpear; but if it makes doubles and windings, it is to be watched very cautiouſly, for it will attempt to catch the ſpear in it's mouth, in which caſe nothing can ſave the combatant but another perſon's attacking the Boar behind.

The modern way of Boar-hunting, is to diſpatch the creature by contriving that all the hunters ſtrike at the ſame inſtant. But the ancient Roman method was for a perſon on foot, armed with a

ſpear,



1. WILD BOAR. 2. BOAT BILL. 3. LESSER BONANA-BIRD 4 NEW GUINEA BOOBY.
5. PAPOU BOOBY. 6. WHITE COLLARED BOOBY.

Plate XXI.

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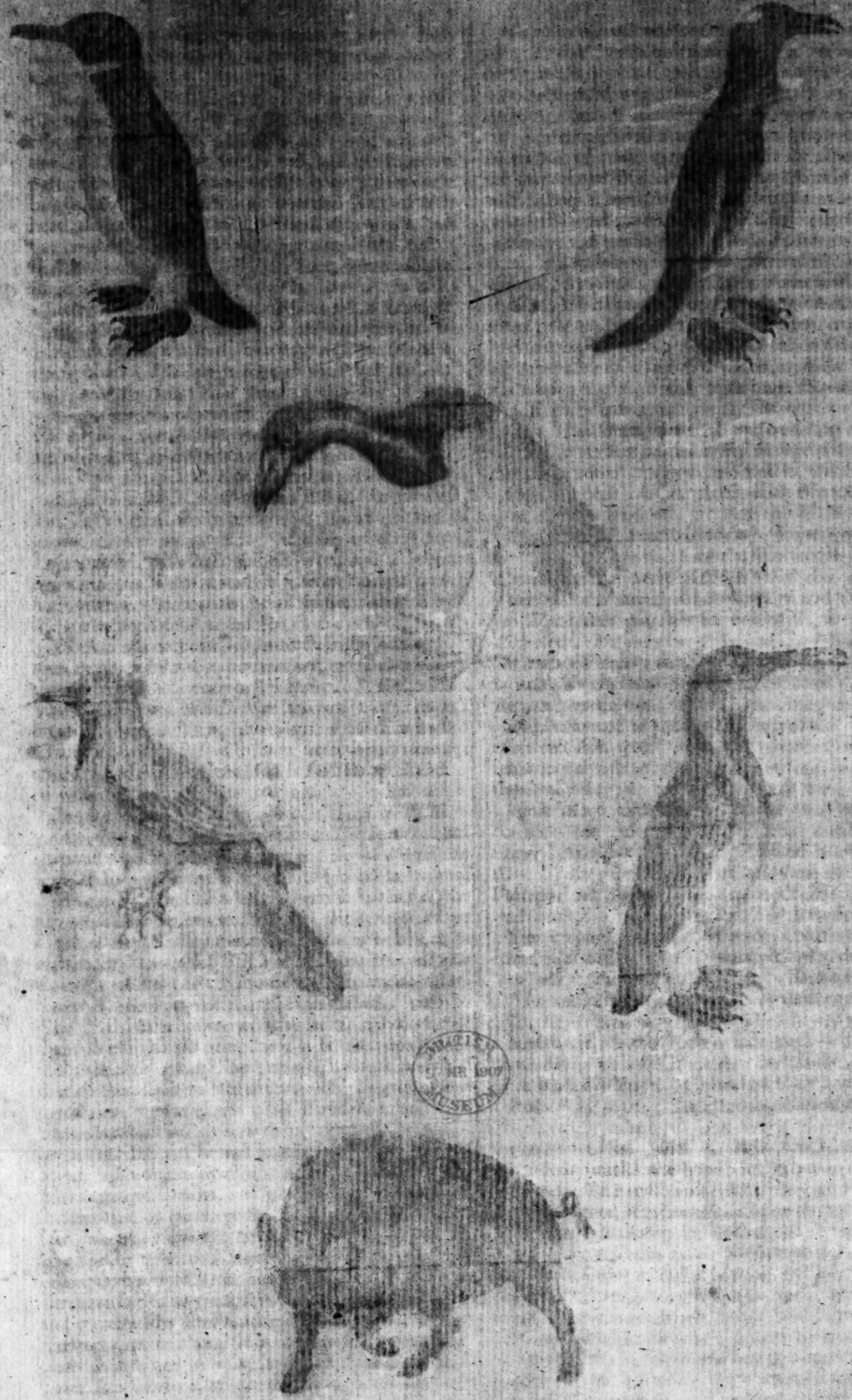

ſpear, to keep the creature at bay; and in this ſituation the Boar would ſpontaneouſly run againſt the ſpear, in order to get at it's aſſailant, and thus be pierced and ſlain.

It is very remarkable, that the Wild Boar, in the Weſt Indies, is ſubject to the ſtone; and it is not uncommon to find a conſiderable number in the ſame bladder, though they ſeldom exceed the weight of a ſcruple. Among phyſicians, the bladder of this animal has been reputed a ſpecific for the epilepſy. It's tuſks have likewiſe been eſteemed efficacious in quinſies and pleuriſies; but on what principle we are not competent to determine.

The Wild Boar was formerly a native of Britain, as appears from the Leges Wallicæ of Hoel Dda, who permitted his grand huntſman to chace that animal from the beginning of November to the middle of December. William the Conqueror puniſhed with the loſs of their eyes ſuch perſons as were convicted of killing either the Wild Boar, the ſtag, or the roe-buck. Fitz Stephens informs us, that the vaſt foreſt which, in his time, lay on the north ſide of London, was the retreat of ſtags, fallow-deer, Wild Boars, and bulls. And Charles I. turned out Wild Boars in the New Foreſt; but they were entirely deſtroyed during the ſucceeding interval of civil diſſention.

BOAROLA, or BOARINA. A very ſmall bird deſcribed by Aldrovandus; and which appears to be of the ſame ſpecies with the muſcicapa, or fly-catcher.

BOAT-BILL. This bird, which appears to be of the ſame genus with the tamatia of Marcgrave, inhabits Brazil, Guiana, and other parts of South America; and is about the ſize of a crow. The bill is broad, depreſſed, ſharp-pointed, and carinated; the forehead is white; the top of the head, the hind part of the neck, and the beginning of the back, are black; the reſt of the back, wings, and tail, of a light cinereous colour; the neck is white on the under ſide; and the belly and vent are brightly ferruginous.

BOAT-FLY. An aquatic inſect, the back of which is ſhaped like the bottom of a boat; and the hind legs, which are thrice as long as the fore, aptly enough reſemble a pair of oars. Mouſet affirms that this animal, contrary to moſt others of the inſect tribe, poſſeſſes the faculty of ſwimming on it's back.

BOCA. A ſpecies of the ſparus. See BOGA.

BOCAMOLLE. An appellation given by ſome naturaliſts to a very large Brazilian fiſh, more uſually diſtinguiſhed by the name of pira-jurumenbeca.

BOCAQUE. This animal, which frequents the banks of the Nieper, has ſome reſemblance to a rabbit. It has four teeth, two in the upper, and two in the under jaw; and the fur is of the colour of that of a badger. It burrows in the earth like a rabbit, from October to the end of April, when it traverſes the fields in ſearch of winter proviſions, it's principal ſubſiſtence being dry graſs and hay. This animal, when domeſticated, becomes very tame, and is capable of learning a number of antic tricks: it is very cunning, and keeps one of it's own fraternity always on the watch while it feeds; the centinel making a whiſtling kind of noiſe, to apprize the other of any danger.

In Carolina, animals of this kind have obtained the name of hares; and they principally frequent marſhes and meadow-grounds. The females conceal their young from the males, after the ſame manner as European rabbits. When one of them is ſtarted and purſued, it takes ſhelter in ſome hollow tree; but the hunters drive it from thence, by making a fire below. On the iſthmus of Darien, they are as large as Engliſh hares, but deſtitute of tails; their ears are ſmall and ſhort; their claws are long; and they commonly lodge about the roots of trees. Labat informs us, that there are ſeveral ſorts in the Brazils; and that the fleſh of all of them is very ſweet, and more juicy than that of animals of the hare kind in Britain.

BOCCA. An appellation given by ſome naturaliſts to the fiſh more commonly known by the name of the uranoſcopus, or ſtar-gazer. It is a ſpecies of the trachinus; and is diſtinguiſhed from the other kinds by having a great number of beards on the lower jaw.

BODIANO. An American fiſh of the ſize of a perch, having a purple back, and yellow belly and ſides. It is more commonly known among naturaliſts under the name of pudiano.

BODTY. A ſpecies of American ſnake of the amphiſbæna kind, called alſo ibijara.

BOGA. A fiſh caught in the Mediterranean ſea, called boops by moſt authors, and evidently a ſpecies of the ſparus. It is about a ſpan long, and of a ſlender, roundiſh figure; the ſcales are pretty large, and of a yellowiſh olive colour; the lateral lines are dark and broad; and beneath them on each ſide are four golden parallel lines, of a ſilver colour, running from the head to the tail: the eyes are diſproportionably large, whence the name of boop, or ox-eye; the irides are of a ſilvery hue; and the mouth, which is of a middling ſize, is furniſhed with very ſmall teeth. There are ſeveral ſpecies of this fiſh.

BOICININGA. A Brazilian term for the rattle-ſnake.

BOIGUACU. A Brazilian ſerpent, called colrade veado by the Portugueſe, and ſuppoſed to be the largeſt of all the reptile tribe. Borritius aſſerts, that he preſerved the ſkin of one of them which he had himſelf killed, and found it to be twelve yards long; and farther avers, that a ſerpent of this kind was killed in the iſland of Java, which was thirteen yards and a half long, and that it's belly contained an entire boar: and De Laet aſſures us that, in the Rio de la Plata, there are ſome of them ſo very large, as to ſwallow a whole ſtag. This formidable animal is thickeſt in the middle of the body, and grows ſhorter and ſmaller towards the head and tail. On the middle of the back, there is a chain of ſmall black ſpots which runs the whole length of the animal; on each ſide there are large round black ſpots, at ſome diſtance from each other, with a white ſpot in their centre; and between theſe, near the belly, there are two rows of leſſer black ſpots, which run parallel to the back. It has a double row of ſharp teeth in each jaw, of a whitiſh colour, and ſhining, like mother-of-pearl: the head is broad; over the eyes there are two prominences; and near the extremity of the tail there are two claws, which reſemble thoſe of birds.

Theſe ſerpents lie hid in thickets, from whence they ſally out unperceived; and, raiſing themſelves erect on their tails, attack man and beaſt indiſcriminately. When exaſperated, they make a loud hiſſing noiſe; and ſometimes aſcend trees, from which they dart down on travellers, and twiſt themſelves ſo cloſely round their bodies, that they diſpatch them in an inſtant. Condamine, however, aſſerts, that their bite is not dangerous; for though

their teeth are ſo large as to inſpire the beholders with terror, the wounds they inflict are not attended with any fatal conſequences. Others affirm, that they haunt deſart places; and that though they are ſometimes ſeen near great towns, or on the banks of contiguous rivers, they make their appearance only after ſome great inundation; that they never ſaw any but ſuch as were dead; and that they appeared to them like the trunks of large trees lying on the ground.

BOIOBI. An American ſerpent, called by the Portugueſe cobra de evrd. It is about an ell long; of the thickneſs of a man's thumb; and of a very beautiful ſhining green. It's mouth is very large; and it's tongue is black. It ſeems to have a predilection for houſes; and never injures any creature unleſs provoked or hurt; but, when either of theſe is the caſe, it will bite, and it's poiſon is then very fatal. The natives uſe the root caa-apia bruiſed, and taken in water, as an antidote againſt the infection.

BOIQUIRA. A name ſometimes given by the natives of America to the rattle-ſnake.

BOITIAPO. A Brazilian ſerpent, called by the Portugueſe cobra de cipo. It grows to the length of ſeven or eight feet; and it's body is as thick as a man's arm, round, and pointed towards the tail like a ſhoemaker's awl. It is covered with very fine ſcales of a triangular form, and of an olive and yellowiſh colour. It lives on frogs, and other ſmall reptiles. It's bite is dangerous; but it is ſuppoſed that it's fleſh might be effectually uſed, like that of the viper, as an alexipharmic and purifier of the blood.

BOLINTHOS. The Ariſtotelian name for the bonaſus, the monops of Ælian.

BOM. An American ſerpent, remarkable for the noiſe it makes, which ſounds like the word uſed for it's name. It grows to a very conſiderable ſize; and does not ſeem to poſſeſs any noxious qualities.

BOMARIN. A name given by ſome naturaliſts to the hipopotamus, or river-horſe.

BOMBARDIER. A ſpecies of inſect, called alſo bupreſtis; the wings of which are incloſed in a kind of caſe that entirely enfolds them. It conceals itſelf among ſtones; and ſeems to make little uſe of it's wings, moving by a kind of ſpring; but, when touched, makes a noiſe reſembling the diſcharge of a muſquet in miniature, during which a blue ſmoke ſeems to be emitted from it's anus; and by ſlightly ſcratching it's back with a pin, it may be made to play off it's little artillery at any time. Rolander, who firſt made theſe obſervations on the inſect, informs us, that it is capable of giving twenty diſcharges ſucceſſively; that a veſicle, placed near the anus, ſeems to be the arſenal from whence it derives it's ſtore; that this proviſion and furniture conſtitute it's chief defence; and that the ſmoke emitted by it appears to be entirely inoffenſive, and can only operate, either in intimidating it's enemies, or concealing it's own flight.

BOMBINA. A ſpecies of the rana, belonging to the order of reptiles.

BOMBYLIUS. The claſſical name for the humble-bee; of which Ray, in his hiſtory of inſects, mentions no fewer than nineteen ſpecies, wholly different from each other. In the Linnæan ſyſtem, it is a genus of the order of diptera.

BOMBY LOPHAGES. The humble-bee-eater. A fly of the tipula genus, larger and ſtronger than the common kinds, and extremely fond of honey; but, being ignorant of the method of extracting it from flowers, it ſeizes on the humble-bee, and deſtroys it, in order to come at it's honey-bag. The body is of a blackiſh colour; the head is of a bright red; and the eyes are very large and prominent. It is chiefly found in mountainous places.

BOMBYLUS TEREDO. The name of a ſpecies of humble-bee, which eats it's way into wood, and there forms it's neſt.

BOMBYX. The claſſical name for the ſilk-worm.

Bombyx is alſo applied by ſome authors to expreſs a ſpecies of winged inſects armed with a ſting like that of the bee. It is ſhaped like a waſp, but is entirely black; and it inflicts a very ſevere wound with it's ſting, which it always loſes in the act. It builds it's neſt of clay, which it works up into a very hard conſiſtence, and faſtens to a ſtone. It ſeems to be a ſpecies of the maſon-bee.

BONANA-BIRD, LITTLE. This bird is a native of thoſe countries where Bonana-trees commonly grow; and from thence receives it's name. The body is about five inches long, and the tail an inch and a half; the bill is only one-third of an inch long, thick, and roundiſh; the head is large in proportion to the body; and it's breadth, when the wings are extended, is nine inches. The feet are black, and armed with ſharp black claws; the feathers on the back, as far as the tail, are downy, and of a deep blue colour; the breaſt is a lightiſh blue; the tips of the feathers on the belly are yellow; and the wings and tail are of a dark blue with a greeniſh caſt.

BONANA-BIRD, LESSER. The bill of this bird is pretty thick towards the head, with a ſlight incurvation downwards, and ſharp at the point, being of a duſky or blackiſh colour, except at the baſe of the lower chap, where it has a fleſhy appearance; and is alſo ſurrounded with black feathers, which are very narrow on the head, but reach down to the eyes, and an inch deep on the throat. The head, and part of the neck, are of a greeniſh yellow or olive colour; and the whole body, both above and beneath, as well as the thighs, and the upper and under coverts of the tail, are of a fine vivid yellow; the leſſer coverts of the wings, both internally and externally, are alſo yellow; but the row of covert-feathers immediately above the wings are moſtly white on their exterior webs, forming a white ſpace in the middle of the wings: the quills are black, except three or four of thoſe next the back, the exterior webs of which are edged with black. Among the leſſer coverts of the wings, near the bend, there is a little mixture of black; and the inſides of the quills are of a dark aſh-colour. The tail is compoſed of twelve black feathers of an equal length, the middle ones being the longeſt, and ſhortening gradually towards the ſides.

This bird, which is a native of Jamaica, was brought from that iſland by Dr. Brown. It builds a long hanging neſt, compoſed of the interior hair of a ſort of moſs, or herb, called old man's beard, which it carefully interweaves from the farther extremities of twigs of high trees, in the ſhape of a ſack; and in theſe it lays it's eggs, to preſerve them from ſnakes and monkies. A neſt of this kind, brought from Jamaica, had the appearance, at firſt ſight, of being conſtructed with horſe-hair.

BONASIA. A ſpecies of the tetrao.

BONASUS. This animal, which the generality of naturaliſts confound with the biſon, is evi-

dently

ſently a ſpecies of the cow-kind, and probably differs from the common breed rather by local than natural cauſes. The Bonaſus is a very thick and bulky creature, and furniſhed with a mane like that of a horſe. It is ſomewhat larger than our bull; the horns do not exceed a ſpan in length, and are ſo turned as to be incapable of inflicting a wound; the noſtrils are wide; and the ears are long and broad. The colour of the animal is a deep tawny, except that the forehead and the breaſt are white; and the mane is of a darker colour than the reſt of the body. Like others of this kind, it has no teeth in the upper jaw before; the tail is ſhort in proportion to the reſt of the body; and the legs are covered with hair. It bellows loudly, like an ox; and, when purſued, does not attempt to defend itſelf with it's horns, but kicks, and diſcharges it's dung againſt it's adverſary, which is pretended to be of a hot and corroſive nature on ſuch occaſions, though not ſo at other times; a circumſtance ſcarcely credible, ſays Ray, if there were not inſtances of other animals poſſeſſing a ſimilar faculty.

BONITO. This fiſh, to which ſome naturaliſts give the name of bonettoe, is about three feet long, and two in circumference. It is often ſeen in company with the albicore, a fiſh nearly reſembling itſelf, and frequently miſtaken for the ſame. The Bonito has a ſharp head; a ſmall mouth; large gills; full ſilvery eyes; and a tail like a half moon. It has no ſcales, except on the middle of the ſides, where a line of a gold colour runs from the head to the tail. It is greeniſh on the back and ſides; but it's belly ſhines like ſilver. It has ſeven fins; two on the back, two at the gills, a pair on the belly juſt below the gills, and one on the middle of the belly oppoſite the largeſt on the back: from the laſt on the back proceeds one very ſmall and narrow, reaching to the tail; and another extends from the laſt on the belly to the tail in like manner.

BONT-VISCH. A Dutch appellation for an Eaſt Indian fiſh, which ſeems to approach to the nature of the European turdus, except that it is deſtitute of ſcales.

BOOBY, COMMON. This bird is generally found about the Weſt Indian ſhores, and in ſeveral parts of the Eaſt. The Jamaica Booby is deſcribed by Sir Hans Sloane under the title of avis fuſca, anſeri baſſano affinis. It feeds upon fiſh, diving under water after them; but is often robbed of it's prey by the voracious albatroſs or man-of-war bird: and the frequent conteſts between theſe two birds are extremely diverting; the former ſhewing as great reluctance to part with it's prey, as the latter is reſolute in plundering the former. This ſpecies of Booby is ſhaped like a raven; the upper parts are of a greeniſh brown; the belly is white; and the feet reſemble thoſe of the duck tribe.

Booby of New Guinea. This ſpecies, which was firſt deſcribed by Sonnerat in his Voyage to New Guinea, is about three feet long. The head, the neck, and the fore part and top of the breaſt, are black; the back is of a blueiſh grey; the belly and legs are covered with white feathers; the wings are ſtreaked with longitudinal lines alternately black, and of a greyiſh white colour; and the feathers which cover them are ſhort, ſerrated, and arranged like ſcales. On each ſide of the head riſes a bar, which is large and rounded at it's beginning, and of a deep yellow colour; after which it grows narrow, and more pale, till it approaches the belly, when it ſpreads itſelf over all it's upper part. The feet are black, and ſcaly; and the bill is long, rounded, prominent, and incurvated at it's extremity; of a black colour two-thirds of it's length from the baſe, and yellowiſh from thence to the point.

Booby, White-Collared. This bird is likewiſe a native of New Guinea; and is about a foot and a half in length. The head, throat, hind part of the neck, ſides, back, wings, and tail, are black; the fore part of the neck, the breaſt, belly, and legs, are white; and feathers of the ſame colour form a ſemicircle round the lower part of the neck, which being contraſted with the ſurrounding black, has a very pleaſing effect. The eye is ſurrounded with a naked membrane, of a blood-red colour; and the bill, the feet, and the irides, are black.

Booby, Papou. This ſpecies, according to Sonnerat, is about two feet long. The head and neck are greyiſh inclining to black; on the top of the head behind, there is a ſemicircular white bar; the back and tail are black; the wings are black in the middle, the exterior borders being grey, and the interior white; the breaſt, belly, and legs, are white; the irides are yellow; and the feet and bill are of a reddiſh hue.

This bird is a native of New Guinea, and receives it's name from the Papoos, a people inhabiting that and the neighbouring iſles; who, being ſeldom viſited by navigators, are of courſe very little known.

BOOK-WORM. An inſect of the moth-kind, which is bred from eggs depoſited in books about the month of Auguſt, and afterwards becomes a fly. It pretty nearly reſembles the mite, or blatta, found in corn; and when the time of it's transformation approaches, it eats it's way through, in order to breathe a freer air.

Various expedients have been adopted for counteracting the depredations of this noxious animal; but the beſt, and indeed the only ſecurity to books, is derived from mineral ſalts, to which every ſpecies of inſects ſhews a ſtrong averſion. For this purpoſe, book-binders ought to mix the ſalt known by the name of arcanum duplicatum, alum, and vitriol, with the paſte uſed in binding; and by this precaution books may be perfectly freed from all the damages occaſioned by this miſchievous inſect.

Mr. Prediger, in his Inſtructions to German Book-binders, printed at Leipſic in 1741, recommends the making paſte of ſtarch inſtead of flour; and the powdering ſlightly the books, their covers, and the ſhelves on which they ſtand, with a mixture of pulverized allum and fine pepper; and is alſo of opinion that, in the months of March, July, and September, books ſhould be rubbed with a woollen cloth ſteeped in powdered allum.

BOOPS. A ſmall fiſh commonly caught in the Mediterranean ſea, about five inches in length, and remarkable for the largeneſs of it's eyes. It is of a rounded ſhape, has large ſcales, and is deemed a ſpecies of the ſparus. But, beſides this common Boops, there are two other varieties: the one, commonly called bouge-ravel, is nearly about the ſize of the Boops; and the other kind is ſmall, being no more than three inches long, and deſtitute of ſcales. It's mouth is ſmall; and it's eyes are extremely large.

Boops is alſo a name ſometimes uſed to expreſs a ſpecies of whale.

BOOR-WORM. A name given by ſome zoologiſts to the ſolen lignorum, a ſea-worm which perforates the bottoms of ſhips.

BORBOTHA. A name ſometimes applied to the muſtella fluviatilis, or eel-pout. See GADUS.

BOS, the Ox. This animal, in the Linnæan ſyſtem of zoology, is a genus of quadrupeds of the order of pecora; the characters of which are, that the horns are hollow, turned forward, bent like creſcents, and ſmooth on the ſurface; the fore-teeth are eight in number; and there are no canine teeth. Of this genus, beſides the common tame ſpecies, there are four naturally wild; the biſon, the bonaſus, the bubulus, and the urus.

BOS GRUNNIENS, or GRUNTING OX. This is a ſpecies of Ox with a mane on it's neck, the whole body covered with long hair, a haunched back, and a tail like that of the horſe. It ſeems to be a native of the country of the Calmucs; and derives it's name from the noiſe it makes, which reſembles that of a hog.

BOS INDICUS, or INDIAN OX. This is another variety, having a large prominence on the ſhoulders, and ſhort horns bending cloſe to the neck, in ſome ſpecies; but almoſt erect, and bending a little forward, in others.

In Surat there is found a ſmall ſpecies not larger than a maſtiff-dog, but having a fierce countenance, and generally employed by the natives in drawing their children in carts.

BOSCHAS. A name ſometimes uſed to expreſs the anas torquata minor, or ſmaller ring-duck.

BOTABOTA. A name for that ſpecies of ſea-ſwallow, the neſts of which are ſo famous in China, as well as in ſome parts of Europe, for making ſoups. Theſe neſts, which are compoſed of a delicious viſcous ſubſtance, are eſteemed reſtorative, and provocative; and for this laſt quality they are held by the eaſtern nations in the higheſt repute.

BOTATRISSO. An appellation given by Bellonius, Geſner, and other naturaliſts, to that ſpecies of the gadus called by ſome lota, and muſtella fluviatilis; in Engliſh, the eel-pout. It is diſtinguiſhed from the other gadi by having two fins on the back; and by the two jaws being of equal lengths with beards at the mouth.

BOTAURUS. A claſſical name for the bird known among Europeans by the title of the bittern-bump, bittern, or mire-drum.

BOTOTOE. A beautiful bird of the parrot kind, very common in the Philippine Iſles; being ſomewhat ſmaller than the common parrot, and entirely of a fine deep blue colour.

BOTTLE-NOSE. A name common in ſome counties of England for the anas arctica Cluſii.

BOTTS. A ſpecies of worms which infeſt horſes and other cattle. This name is alſo applied to a ſort of grubs which deſtroy the graſs in bowling-greens.

BOUGE RAVEL. A ſpecies of the boops, caught in the Mediterranean Sea. The noſe is long and pointed; the back is of a reddiſh blue; the tail is red; the belly is of a fine ſilvery white; and the whole body is ſhorter and broader than that of the common kind of boops.

BOUNCE. A provincial name for a ſpecies of the ſqualus, diſtinguiſhed by Artedi by the name of the reddiſh variegated ſqualus, with the pinna ani in the middle ſpace between the anus and the tail. This fiſh is called ſcymnos and ſeylius by ancient naturaliſts, and catulus major by the modern ones.

BOUTAEL. An Eaſt Indian fiſh of the lamprey kind; called alſo neegen ogen; and by Ray, lampetra Indica. It is found in lakes, ponds, and other ſtanding waters; and is very wholeſome and well-taſted. It's general deſcription, however, indicates it to be rather of the muſtella than the lampetra kind; but if, as it's name expreſſes, it has ſeveral apertures for the gills, it is abſolutely a new genus of fiſh.

BOUVIERA. A name given by ſome naturaliſts to a ſmall, broad, and flat freſh-water fiſh, more uſually called bubulca.

BOYEUPECANGA. A very large and remarkably thick ſerpent, diſtinguiſhed by this name on account of certain prominencies on it's back. The poiſon of this reptile is reckoned highly deleterious.

BOYUNA. An American ſerpent, of a long and ſlender ſhape, and entirely of a black colour. It's ſmell, which reſembles that of a fox, is ſo very ſtrong, as to be almoſt intolerable.

Boyuna is likewiſe the name of a Ceyloneſe ſnake, ſo very harmleſs, that it is a favourite animal among the natives, who conſider the meeting it as a propitious omen.

BRACHIONUS. A genus of animalcules of the anthrodia kind, containing all the wheel animals.

BRACHURI. A name given by Dr. Hill to a genus of animalcules of the tailed kind. They are of a roundiſh figure; their tails are ſhorter than their bodies; and their ſkins are perfectly ſmooth, thin, and colourleſs. They are frequently found in ponds, in peppermint-water, and in many other infuſions of vegetable ſubſtances.

BRACHYPTERA. The name of a genus of birds of the claſs of hawks, diſtinguiſhed by the ſhortneſs of their wings. This appellation is derived from Brachus, Short, and Pteron, a Wing.

Hawks of this genus have ſuch ſhort wings, that, when folded, they do not nearly reach to the end of their tails. Of this genus are the goſhawk, the ſparrow-hawk, and the different ſpecies of the butcher-bird.

BRADYPUS. A Linnæan genus of quadruped called anthropomorpha; by ſome naturaliſts termed ignavus; and, in Engliſh, the ſloth. It's characters are, that the mouth is deſtitute of fore-teeth; the canine teeth are obtuſe, and longer than the grinders, of which there are five on each ſide; the body is covered with hair; the feet have no great toes, and are formed for climbing; and on the breaſt there are two paps. There are only two known ſpecies of this genus: the one is called the American ſloth, with a ſhort tail, and three toes on each foot; and the other is named the Ceylon ſloth, with only two toes on each foot, and no tail.

BRAMBLING. This bird, which is ſometimes called the mountain-finch, and at others the ſea-lark, is larger than the chaffinch, and belongs to the ſparrow claſs of aves. The top of the head is of a gloſſy black colour, ſlightly edged with a yellow brown; the back feathers are of the ſame colours, except that their edges are more deeply bordered with brown; the chin, throat, and breaſt, are orange; the leſſer coverts of the wings are of the ſame colour, but thoſe incumbent on the quill-feathers are barred with black tipped with orange; the interior coverts at the baſes of the wings are of a fine yellow; the quill-feathers are duſky, but their exterior ſides are edged with yellow; the tail is ſlightly forked; the exterior web of the outmoſt feather

feather is white; and the others are black, except the two middle ones, which are edged and tipped with aſh-colour.

BRAMBLING, or MOUNTAIN FINCH OF LINNÆUS. This ſpecies ſeems to be quite different from the former. The male is black above, and the edges of the feathers are irregularly tinged with a dark iron colour; the belly is white; the breaſt and exterior baſes of the wings are of a gold colour, but the interior baſes are of a deep yellow. The prime feathers of the wings are black, their outer edges being white; and four of theſe feathers, as well as thoſe which follow towards the baſes, are externally half white and half black. The principal feathers on the tail towards the outſide are black; but, between them, there are ſeveral which are white on their external ſides towards their baſes.

The female Brambling is brown in thoſe places where the male is white, and cinereous where he is of a deep yellow. Under the baſes of the wings, ſhe is of a beautiful yellow; under the vent, of an irregular yellow; and the prime-feathers of the wings and tail are of the ſame colour with thoſe of the male.

BRANCHIOSTEGI. A term expreſſive of one of the general claſſes of fiſhes; the characters of which are, that the rays of the fins are of a bony ſubſtance, but they have no bones, or oſſicula, at the branchiæ, as all the malacopterygious and acanthopterygious fiſhes have. The above term is derived from Branchia, Gills; and Oſteon, a Bone.

BRANDARIS. A ſpecies of the ſtrombus, in the order of teſtacea.

BRAND-HERRING. A kind of herring, ſo called by the Dutch.

BRANLIN. A ſpecies of fiſh of the ſalmon kind, called in ſome parts of England the fingery; which name it obtained from five or ſix tranſverſe black ſtreaks on each ſide, having the appearance of the impreſſion of ſo many fingers, and each marked with a ſingle red ſpot. The tail of this fiſh is forked like that of the ſalmon; and it has been ſuppoſed by ſome that they are all of the male kind. They ſeem to impregnate the ſpawn of the common ſalmon; and are found in waters of ſo rapid a current, that ſcarcely any other ſpecies of fiſh could live in them. Willughby, however, obſerves, that they never attain to any conſiderable ſize.

BRASEM. A name by which ſome naturaliſts have called an American fiſh of the ſmaris kind, more commonly known by it's Brazilian name, acaropeba.

BREAM. A river fiſh of the leather-mouthed kind, reckoned a ſpecies of carp, and called by the generality of naturaliſts cyprinus latus. It is found in lakes, and in the deepeſt parts of ſtill rivers. The body is extremely deep and thin in proportion to it's length; the back is much elevated, and very ſharp at the top; the head and mouth are ſmall; and, during the ſpring, the animal is ſometimes covered with abundance of minute whitiſh tubercles. The ſcales are very large, and the ſides are flat and thin The dorſal fin has eleven rays, the ſecond of which is the longeſt; and that fin, as well as all the reſt, are of a duſky colour. The back is of the ſame hue; the ſides are yellowiſh; and the tail, which is remarkably large, repreſents a creſcent. The fleſh of the Bream is very little eſteemed, being extremely inſipid to the taſte.

BREAM, SEA. A fiſh of the ſparus kind, found in the ſeas near Surinam, and growing to the length of three or four feet. The eyes are large; and the ſnout, belly, fins, and tail, are of a pale red colour. It is caught among the rocks in deep water; and it's fleſh is very agreeable food.

BREEZE-FLY. See ŒSTRUM, and GAD-FLY.

BRENT GOOSE. A fowl of the gooſe kind, in many reſpects reſembling the barnacle, but of inferior ſize. The bill is an inch and a half long; the colour of which, as well as the head, neck, and ſuperior part of the breaſt, is black; and on each ſide of the ſlendereſt part of the neck there is a white ſpot: the lower part of the breaſt, the ſcapulars, and coverts of the wings, are aſh-coloured, clouded with a deeper ſhade; the feathers, both above and below the tail, are white; and the tail, the quill-feathers, and the legs, are black.

The Brent Geeſe frequent the coaſts of the Britiſh Iſles in winter. They feed on a ſort of long water-graſs; but prefer the roots, and thoſe parts of the ſtalks immediately above them, which they dive for, bite off, and leave the upper parts to drive with the tide. In Ireland they are extremely numerous; particularly near Londonderry, Belfaſt, and Wexford, where they are taken in nets placed acroſs the rivers. Their fleſh is much admired for it's delicacy.

The rat, or road-gooſe, of Willughby, agrees in ſo many reſpects with the Brent Gooſe, that it is probably no other than the young bird not full-feathered; the only difference conſiſting in the feathers next the bill, and thoſe on the throat and breaſt, being brown. However, Willughby, Ray, and Buffon, very properly deſcribe the barnacle and the Brent Gooſe as two different ſpecies; while Linnæus, in his Fauna Suecica, makes them ſynonymous, and deſcribes the true barnacle as the female of the white-fronted wild-gooſe.

BRESILIA. A ſpecies of tanagra, in the order of paſſeres.

BRESMA. A name given by ſeveral authors to the bream, a ſpecies of cyprinus.

BRET. A provincial appellation of the common turbot.

BRICK. A ſpecies of lamprey, called lampetræ medium genus, and diſtinguiſhed from the other lampreys by a number of very long and narrow black tranſverſe ſpots.

BRISSOIDES. A genus of the echini marini; the diſtinguiſhing characters of which are, that their figure is oval; their backs are ſtriated; and their rays are ſmooth. There are two known ſpecies of this genus: the one is flat, and called by ſome the cranium; and the other, called the amygdala, is high, and uſually found foſſile immerſed in flint.

BRISSUS. Another genus of the echini marini; the characteriſtics of which are, that they are of an oval figure, and have the aperture of the anus ſituated on one ſide of the ſuperficies. Their backs are ſmooth and even; but, on the vertex, they have ſeveral very elegant crenated and dotted lines. The baſe appears as if cut off on the extremity neareſt the mouth; and is not flat, as in the ſpatangi, but raiſed after the manner of a cuſhion.

BROAD-WORM, or LUMBRICUS LATUS OF LINNÆUS. A name given to the tænia, or tape-worm.

BROCADE-SHELL. An appellation given to a ſpecies of the cylindrus. It is of a ſilvery colour, variegated with brown.

BROCK. A term uſed by ſportſmen to expreſs a badger; and alſo to denote a hart in it's third year.

BRONCINI. A name given by ſome naturaliſts to the lupus, or ſea-wolf; called, in Engliſh, the wraſſe.

BRUTE. In the Linnæan ſyſtem, the ſecond order of mammalia; the characters of which are, that they have no upper or under fore-teeth; their feet are armed with ſtrong hoofs; they are not formed for ſwift or ſtately motion; and they maſticate their food. This order comprehends ſix genera, and ſeventeen ſpecies.

BUBALINUS SERPENS. This ſerpent, the anaconda of the Ceyloneſe, is a very formidable reptile, and extremely deſtructive to cattle; from which circumſtance it receives both it's claſſical and Indian name.

BUBALUS. A ſpecies of wild bull, ſuppoſed by modern naturaliſts to be the ſame with the biſon and urus.

BUBO. See Owl.

BUBULCA. A freſh-water fiſh, called by ſome naturaliſts bouviera and petenſe. It is ſmall, flat, and extremely ſhort; rather of a circular than an oblong ſhape; and of a fine ſilvery white colour.

BUCA. A name ſometimes given to the buccinum.

BUCAO. A ſpecies of ſcreech-owl very common in the Philippine Iſles. It grows to the ſize of a peacock, and is a very beautiful bird; but it's nocturnal ſcream is as hideous as can well be conceived.

BUCARDIUM. A name given by ſome conchologiſts to a kind of heart-ſhell, ſo called from it's fancied reſemblance to an ox's heart. It is of the genus of cordiformes, or heart-ſhells; and differs from other kinds in being more globular.

The cabinets of the curious afford us ſeven ſpecies of this ſhell; namely, a yellow furrowed one; a grey ſpinoſe one; a white furrowed one; a thicker narrow one; a thick one, with a cardo ſeparated from the apex; a thick kind, with the cardo at the apex; and the baſtard Noah's ark.

BUCCEPHALUS, or MOSCHEPHALUS. This animal, which is of the ſize of a hind, is of a ſhape between the hind and the heifer; and approaches pretty near to the gazelle tribe, of which it appears to be a variety. The head, legs, and hoofs, are long and ſlender; the tail, which is a foot long, reſembles that of a cow; the head is of a reddiſh colour; and the horns are black, ſmooth at their tops, and rough below. This animal has two udders; and is very mild, tractable, and ſportive.

BUCCINA. A family of ſhells, called whelks in Engliſh; the general characters of which are, that their mouths are an oblong, or very lengthened, oval; the upper parts of which are produced or lengthened into gutters or ſlight beaks.

The immenſe quantities of ſpecies this family contains, as well as their numerous ſubordinate characters, have produced ſuch perplexity and confuſion among conchologiſts, as can ſcarcely be unravelled.

According to the accurate Da Coſta, the family of Buccina, or whelks, may be divided into the ſix following genera:

Buccina Canaliculata, vel Buccina roſtro canaliculato. Guttered whelks, or thoſe whelks the upper parts of whoſe mouths terminate nearly in ſtraight and ſomewhat prolongated gutters.

Buccina Recurvirostra, vel Buccina ore quaſi abſciſſo, canaliculo recurvo; Buccina plagioſtoma. Wry-mouthed whelks; or thoſe whoſe mouths are, as it were, cut ſhort at their tops; for the gutters or beaks do not extend ſtraight forward from the ſuperior parts of their mouths, but bend or fall on their backs in a wry manner, exactly like the mouths of ſoles and other flat fiſh.

Buccina Rostrata, vel cum roſtro longiſſimo. Beaked whelks; or thoſe which have very long beaks, ſuch as the crane, the ſpindle, the purpuræ, and others.

Buccina Umbilicata. Umbilicated whelks; or ſuch as have an umbilicus or perpendicular hollow, or navel, along-ſide the columella or pillar-lip, on the firſt or body whirl.

Buccina Columella Dentata, vel Plicata. Whelks with wrinkled or plaited pillars; and in theſe the columella, or pillar-lip, is wrinkled, ridged, or worked with plaits.

Buccina, Strombi, or needles, having very long and taper clavicles or turbans, and wry-mouths turning on their backs, in ſome ſpecies of ſuch lengths as to reſemble ſpurs.

In the Linnæan ſyſtem, the Buccina form a diſtinct genus of the univalve and ſpiral teſtacea. Thoſe ſpecies moſt uſually met with on the coaſts of the Britiſh Iſles are the brown, maſſy, waved, ſtriated, reticulated, and ſmall Buccina. The incloſed animal is a ſlug.

BUCCO. A genus of birds of the order of picæ.

BUCEROS. A ſpecies of raven found in the Eaſt Indies, Tartary, and China. The head, neck, rump, and tail, are of a fine gloſſy black, without the leaſt intermixture of any other colour. It is about the ſize of a full-grown pullet; the head is diſproportionably large; and the beak has a conſiderable gibboſity towards the baſe, riſing above the reſt of the ſurface.

Buceros likewiſe forms a genus of birds of the order of picæ in the Linnæan ſyſtem. The beak is convex, and bent backwards; the upper chap is longer than the under; the noſtrils are ſituated near the baſe of the beak; the tongue is acute and ſhort; and the feet are formed for walking. Of theſe birds there are four diſtinct ſpecies.

BUCK. The male of the fallow-deer, the female of which is denominated a doe.

A Buck, the firſt year, is called a fawn; the ſecond, a pricket; the third, a ſorel; the fourth, a ſore; the fifth, a Buck of the firſt head; and the ſixth, a great Buck. See Deer.

The term Buck is likewiſe applied to the males of the hare and rabbit kind.

BUDHURS. The Iriſh name for a large ſpecies of trout externally reſembling the red gillaroo.

BUFFALO. An animal of the cow-kind, between which and the common ox there is a very ſtriking ſimilitude. They are equally ſubmiſſive to the yoke, frequently live under the ſame roof, and are employed in the ſame domeſtic ſervices. Their figures are ſo nearly alike, that it requires ſome degree of attention to be able to diſtinguiſh them; and yet (as Buffon obſerves) no two animals can be more diſtinct, or appear to have a ſtronger averſion to each other: and were there only one of each kind, it is probable that the race of both would ſoon be extinct. Certain, however, it is, that the antipathy of theſe two animals is ſo great, that the cow will not breed with the Buffalo, which it ſo greatly reſembles; though it will with the biſon, to which animal it has in ſhape but a very diſtant ſimilitude.

The

BUCCINA OR WHELKS.

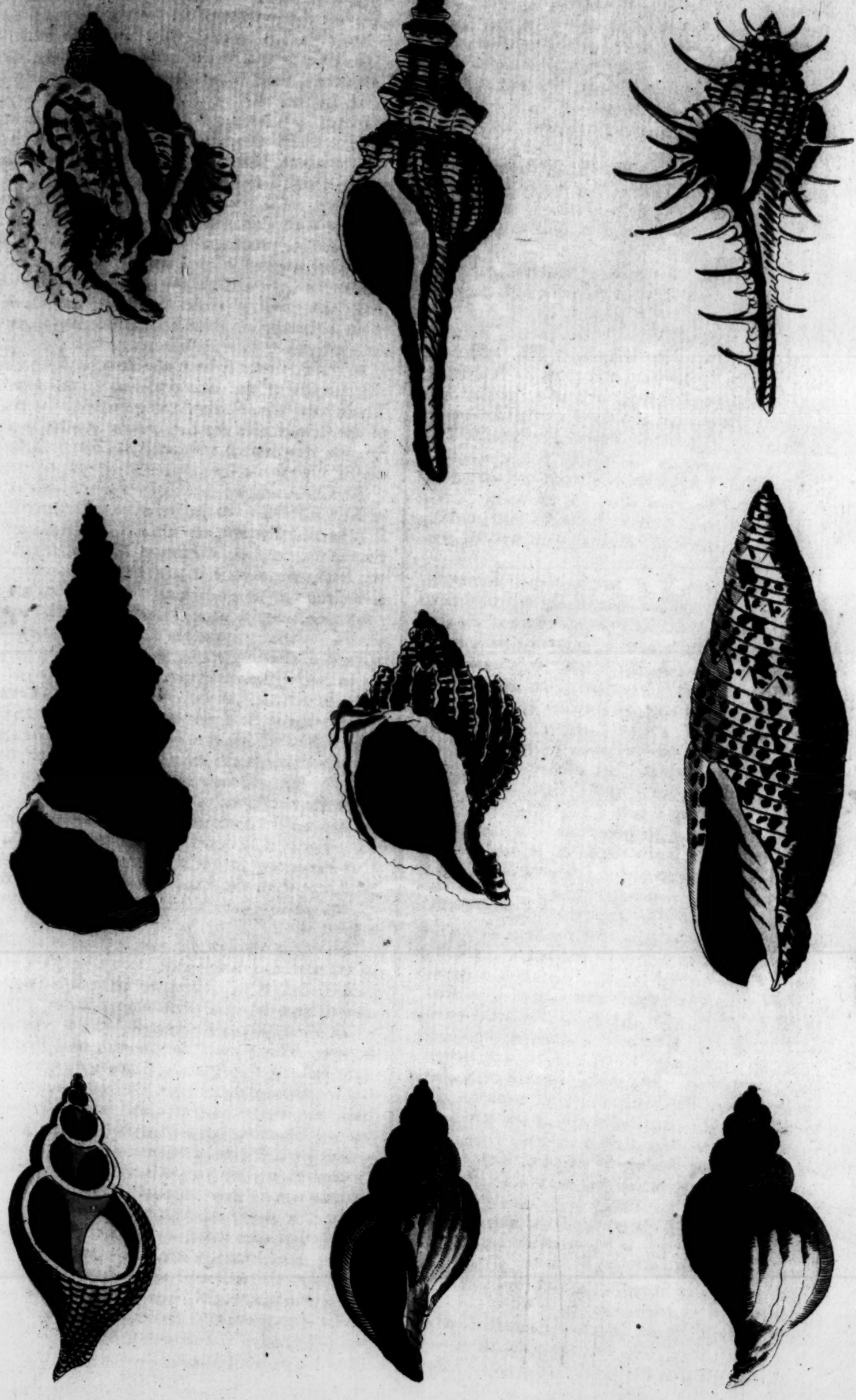

Plate XXII.

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INSTITUT DE FRANCE
9 MAR 1907
BIBLIOTHÈQUE

The Buffalo is by no means ſo beautiful a creature as the cow. It's figure is more clumſy and aukward, it's air is more wild, and it carries it's head nearer the ground; it's limbs are not ſo fleſhy, nor is it's tail ſo well covered with hair. It's body is ſhorter and thicker; it's legs are higher; it's head is ſmaller; it's horns are compreſſed, one ſide being ſharp, and a tuft of hair hanging down between them; it's ſkin is alſo harder, thicker, blacker, and more deſtitute of hair; and it's fleſh, which is hard and blackiſh, is not only diſagreeable to the taſte, but alſo to the ſmell. The milk of the female, though produced in great abundance, is by no means ſo good as that of the cow. However, in warm climates, the greateſt part of the butter and cheeſe is made of the milk of the Buffalo. The veal of the Buffalo is ſcarcely better food than the beef; and, in ſhort, it's hide, which is well known for it's ſoftneſs, thickneſs, and impenetrability, is the moſt valuable production of that creature.

Buffaloes poſſeſs a very conſiderable degree of ſtrength; and are accordingly employed in agriculture, and in drawing and carrying burdens, being guided by rings thruſt through their noſes: and it is ſaid that two of them, when yoked together, are capable of drawing more than four ſtrong horſes.

From the ſize of the Buffalo, (in which it is inferior only to the elephant, the rhinoceros, or the hippopotamos) it may naturally be concluded, that it is a native of the warmer climates; and accordingly we find this animal wild in many parts of India, and alſo tame wherever the natives have occaſion for it's ſervices. Wild Buffaloes are very formidable animals; ſometimes goring travellers to death, and afterwards trampling on and mangling their bodies in a ſhocking manner: however, they are leſs to be dreaded in the woods than in the plains; becauſe, from the violence of their purſuit, their large horns are frequently entangled in the branches of trees, ſo that ſufficient time is afforded the traveller to make his eſcape. There is, indeed, ſcarcely any other probability of avoiding them: for they are extremely ſwift; and ſuch excellent ſwimmers, that they croſs the largeſt rivers with the greateſt facility. Like all other animals of the torrid zone, they are very fond of the water; and, even in the midſt of their purſuits, frequently plunge into that element, for the purpoſe of cooling themſelves.

The negroes of Guinea, as well as the Indians of Malabar, (in which countries there are vaſt numbers of Buffaloes) greatly delight in hunting and deſtroying them. They never attempt to face theſe animals; but uſually climb trees, from whence they ſhoot at them; nor do they venture to deſcend till they have effectually diſpatched them. However, when tamed, no animals can be more patient and humble, nor go through domeſtic drudgeries with greater perſeverance.

Though Buffaloes are chiefly found in the torrid zone, they are nevertheleſs bred in ſeveral parts of Europe; particularly in Italy, into which country they were introduced during the reign of Agilulf, King of the Lombards, between the years 591 and 616. They are ſaid to be found wild in Apulia; and to be very common, in hot weather, on the ſea-ſhore between Manfredonia and Barletta. They grow to an enormous ſize, being twice the ſize of our largeſt oxen; from which circumſtance they are by ſome called taurelephantes.

In the Britiſh Muſeum there is a pair of horns, probably of this kind; one of which is ſix feet ſix inches and a half long, and it's cavity is capable of containing five quarts of water: but Lobo mentions ſome which were ſufficiently capacious to contain near three gallons.

Ariſtotle deſcribes theſe animals, with abundant preciſion, under the appellation of wild oxen, among the arachotæ; notwithſtanding which, Belon and Buffon affirm, that they were totally unknown to that philoſopher.

The female Buffaloes, like cows, produce but one at a time. But they are very different in their periods of geſtation: the cow is well known to go but nine months; whereas the Buffalo goes twelve. The Buffalo, indeed, forms a diſtinct kind, and never mixes with the cow, the biſon, or the urus: it manifeſts a ſtrong averſion to the former; and, when feeding in the ſame paſture, always keeps apart; and produces a ſeparate race in every quarter of the globe where it is found.

All Buffaloes are extremely fearful of fire; and, perhaps, in conſequence, have an averſion to red colours. In general, they are inoffenſive animals, if undiſturbed; but, when wounded, or even fired at, their fury becomes ungovernable: they then turn up the ground with their fore-feet; bellow more loudly, as well as more terribly, than the bull; and purſue the objects of their reſentment with determined fury. It is, however, remarkable, that though their horns are ſo very formidable, they in general employ their feet more in combat, and endeavour to trample their enemies to death.

There are various ſpecies of the Buffalo; but naturaliſts have ſo confounded them with the bonaſus, biſon, and urus, that it is extremely difficult to refer them to their proper claſſes.

Buffalo, Musk. The horns of this ſpecies are cloſely united at their baſes, bending inwards and downwards, and turning outwards at their extremities; and are about two feet long, and very ſharp at their points. The head and body are wholly covered with very long ſilky hairs of a dark colour; and the fleſh ſmells ſtrong of muſk. This animal is found about Churchill River, in Hudſon's Bay, and the river of Seals. It ſeldoms exceeds the deer in height, but is exceſſively nimble. The breed, however, may be traced in different parts of the continent of America.

A part of this ſpecies has likewiſe been diſcovered in the north of Aſia, near the mouth of the Oby, in a foſſile ſtate; but whether the animal is a native of any part of the Aſiatic continent, or was only carried thither by chance, has not yet been ſufficiently inveſtigated.

Buffalo, Cape. The length of this ſpecies is eight feet, and it's height five and a half; the body is thick, and the limbs clumſy and ſtrong. The horns are large at their baſes, bend outwards, and then ſuddenly turn inwards; their length along the curve is one foot nine inches; and their diſtance, from tip to tip, is eight inches and a half. The face is covered with long rough black hair; the chin, the under-ſide of the neck, and the dew-lap, are ſurrounded with long hanging coarſe hair of the ſame colour; and from the horns, along the top of the neck, to the middle of the back, there is a long looſe black mane. The body is covered with ſhort dark cinereous hair; the baſe of the tail is cinereous, and almoſt naked; and the reſt is covered with long black hair.

Some of theſe animals grow to a much larger ſize than that we have deſcribed, as is evident from a pair of horns in the Leverian Muſeum; the length

length of which, along the curvature, is three feet and upwards; and, between tip and tip, one foot ſix inches.

Theſe Buffaloes inhabit the interior parts of Africa north of the Cape of Good Hope, but it does not appear that they extend to the north of the tropic. They far exceed the largeſt Engliſh ox in magnitude; their heads hang down; and they have a very fierce and malicious aſpect. They lie in ambuſh in woods, and other ſecret places; and, ruſhing ſuddenly on paſſengers, trample them, their horſes, and oxen of draught, under their feet; ſo that they are dreaded as ſome of the moſt formidable beaſts of this country; and they will even return to the attack, and lick the mangled bodies. Their ſwiftneſs is prodigious; and they are ſo ſtrong, that one only three years of age having been placed, for an experiment, with ſix tame oxen in a waggon, could not be moved from the ſpot by their united exertions.

This ſpecies likewiſe abounds in the interior parts of Guinea; but they are ſo fierce and malevolent, that the negroes who purſue other ſavage animals are fearful of moleſting them. The lion, which is able to break the back of the ſtrongeſt domeſtic ox at one blow, is unable to maſter this creature, unleſs by leaping on it's back, and ſuffocating it by fixing it's talons about it's noſe and mouth. The lion, indeed, often periſhes in the attempt, but not without leaving the marks of it's fury about the mouth and noſe of the Buffalo. The fleſh is coarſe, but juicy, and has a ſtrong flavour of veniſon: it is much eſteemed in thoſe countries where theſe animals are found; but it probably derives ſome ſhare of it's reliſh from the difficulty attending it's attainment.

The Cape Buffaloes are gregarious; and generally retire, during the day, into the thickeſt foreſts. They are called aurochs by the Dutch ſettlers; but differ totally from the European Buffaloes, approaching ſo nearly in ſpecies to the laſt kind, that they may be conſidered merely as a variety. The warmth of the climate has prevented the vaſt length and abundance of hair which diſtinguiſhes the former; and the luxuriancy of the herbage has given them the vaſt ſuperiority of ſize.

However, another ſpecies of aurochs has been mentioned by the Dutch travellers; who ſay that it reſembles the common ox, but is larger, and of a grey colour; that it's head is ſmall, and it's horns are ſhort; that the hair on the breaſt is curled; that it has a beard like a goat; and that it is ſo ſwift, that the Namacques call it baas, or the maſter-courier.

BUFFALO, DWARF. The horns of this ſpecies recede in the middle, and almoſt meet at the points, ſtanding erect. It's body is larger than that of a roebuck, and leſs than a ſtag's; it is compact and well-made in all it's limbs: the hair is ſhining, and of a tawny brown; the legs are ſhort; the neck is thick; the ſhoulders are a little elevated; and the tail is terminated with coarſe long hairs.

Belon met with this ſpecies at Cairo; but ſays that it was brought from Azafi, a province of Morocco ſituated on the ocean.

BUFFALO, LITTLE INDIAN. This animal grows to the ſize of a calf ſix months old; and reſembles the Engliſh bull in ſhape, except that it has very ſhort horns, and a bunch riſing on the back between the ſhoulders. In the Eaſt Indies theſe Buffaloes are uſed for drawing coaches, inſtead of horſes. The noſe is broad, flat, and deſtitute of hair; on the lips, or muzzle, there are ſome looſe, ſhaggy, ſtraggling hairs; and the hair on the inſide of the noſe is whitiſh. The horns, which are ſmall, and of a dark colour, appear but a little way above the rough hair on the top of the head; the ears are much longer and larger than the horns, being of a fleſh colour, and internally deſtitute of hair; the body is wholly covered with ſleek hair; that on the head, neck, tail, back, and ſides, being of a blueiſh colour. The looſe ſkin on the neck is white; and the belly is covered with ſo ſmall a quantity of lightiſh hair, that it ſhews the fleſh colour. The legs are of a light colour, ſpotted and marked with black, and become gradually whiter towards the feet. The tuft of hair at the extremity of the tail is black; and the hoofs, which are ſhaped like thoſe of the cow, are of a dark brown.

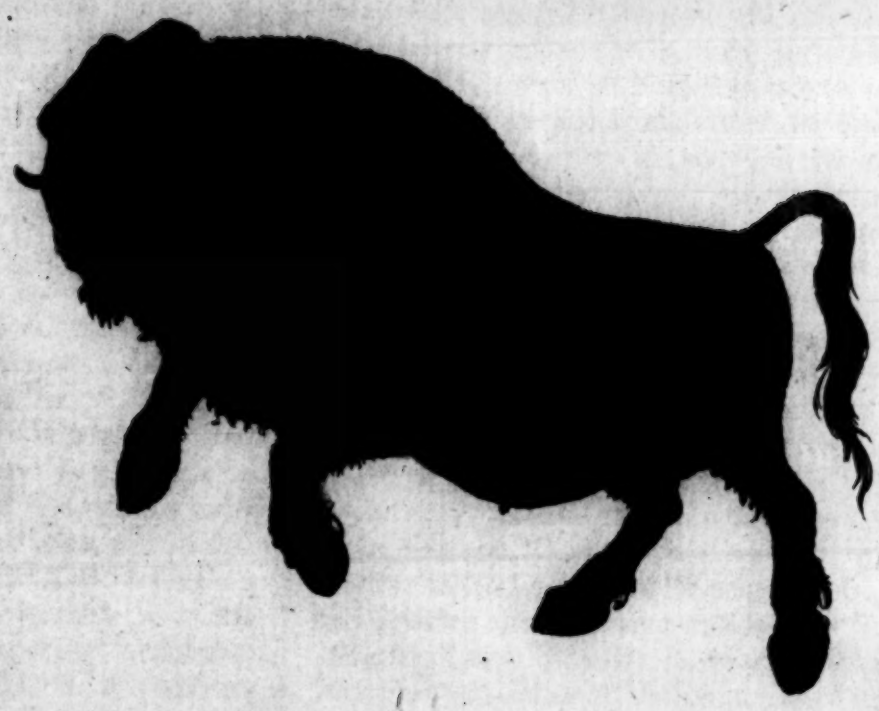
BUFFON BIRD. An African bird to which the French give the title of demoiſelle, or lady, on account of it's elegant geſticulations; but it's proper name is the Numidian crane, though it is beſt known by the deſignation we have adopted. It poſſeſſes the greateſt peculiarity of manners; it ſtops, riſes, lifts one wing, then another, turns round, ſails forward, then backward; all which motions afford high diverſion to the ignorant, who never conſider that theſe contortions are only the aukward expreſſions of the animal's fears. This bird is very ſcarce, even in thoſe countries where it breeds. The plumage is of a leaden grey colour; but it is diſtinguiſhed by fine white feathers, conſiſting of long fibres, which fall from the back of the head about four inches long; while the fore-part of the neck is adorned with black plumage, compoſed of very fine, ſoft, and long fibres, hanging down on the breaſt, which give the bird a very graceful appearance.

BUFO. A name frequently applied to expreſs the toad, denominated by others rubeta.

BUG. A very nauſeous inſect, which intrudes on the retreats of mankind, and is of all others the moſt troubleſome and noxious. When the weary retire to reſt, the bug iſſues from it's retreat, and commences it's depredations. By day it lurks in the moſt ſecret parts of the bed; takes the advantage of every chink and cranny to make a ſecure lodgement; and contrives it's habitation with ſo much art, that ſcarcely any induſtry can detect it. It ſeems to avoid the light with great cunning; and even if candles be kept burning, it is fearful of iſſuing from it's hiding-place; but no ſooner does darkneſs promiſe ſecurity, than it crawls out from ſome corner of the bed, and travels with great aſſiduity to attack it's victim, whom it peſters with unceaſing cruelty.

Nor are theſe animals leſs diſagreeable from their nauſeous ſtench than their voracious appetites. When they begin to crawl, the whole bed is infected with the ſmell; but if they are accidentally killed, it becomes inſupportable. Theſe are ſome of the inconveniences reſulting from the perſecution of theſe odious inſects; but, happily for Great Britain, they multiply leſs in theſe iſlands than in any part of the continent. In France and Italy the beds, particularly in the inns, ſwarm with them; and every piece of furniture ſeems to afford them a retreat: they alſo grow to a larger ſize in thoſe countries than with us, and bite with more ſeverity.

If minutely examined, this animal will be found to conſiſt of three principal parts; the head, the corſelet, and the belly. It has two ſmall brown eyes,



1. LITTLE INDIAN BUFFALO. 2. MUSK BUFFALO. 3. ASH-COLOURED BUZZARD.
4. COMMON BUZZARD. 5. MOOR BUZZARD.

Plate XX.

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BRITISH
9 MR 1907
MUSEUM

eyes, a little prominent; beſides two feelers with three joints, underneath which there is a crooked trunk, it's inſtrument of annoyance, and which, when in motion, lies cloſe upon the breaſt. The breaſt is a kind of ring, in which are placed the firſt pair of legs. The belly conſiſts of nine rings, under which are placed two more pairs of legs; each leg has three joints; and the feet are armed with crooked claws, reſembling hooks. The body is ſmooth, except a few ſhort hairs about the vent, and on the two laſt rings, which may be ſeen through a microſcope. It's motion is ſlow and unwieldy; but it's ſight is ſo exquiſite, that, the moment it perceives the light, it generally makes good it's retreat, and is ſeldom caught, though the bed may ſwarm with the breed.

If internally examined, we ſhall find the great artery, which in all inſects performs the functions of the heart; we ſhall likewiſe diſcover the aperture of the lungs, on the right ſide and on the left, through which the animal breathes; and we ſhall find a ſtomach and inteſtines running from the mouth to the anus. If the inſect has faſted for any conſiderable time, it's body will contain a mucus like the white of an egg; but, if cruſhed after a full meal, the human blood which it has drained will appear a little darkened by having paſſed through it's body.

The parts of generation in theſe animals are ſufficiently obvious; they are often found coupling tail to tail, and in that ſtate are very eaſily deſtroyed. The female has an oviary filled with eggs, joined together like a bunch of grapes; each egg being oblong, almoſt cylindrical, inclining to white, and pretty tranſparent. In about two days after impregnation by the male, ſhe depoſits her eggs, to the number of an hundred and fifty, in ſome convenient place where they are likely to remain undiſturbed: there they continue for ſome months; during which time, neither heat nor cold, moiſture nor fumigation, can in the leaſt retard their excluſion; but they come forth active, and endowed with the noxious qualities of the ſpecies. This hardneſs of the ſhell ſeems to continue the breed, which might otherwiſe be annihilated, as the old ones die every winter, or are eaſily deſtroyed by a fumigation uſed for that purpoſe: but the eggs ſeem incapable of deſtruction; and even thoſe who profeſs to kill theſe nauſeous inſects, though they may anſwer for the parent, can never make certain of the egg.

The manner of deſtroying Bugs, notwithſtanding the various preſcriptions which have been publiſhed, and the noſtrums which have been applied by individuals, ſeems rather the effect of aſſiduity than of antidote. Cleanlineſs is the moſt effectual preventative, and that alone will tend to exterminate them. They are, however, of themſelves, an effectual antidote againſt other ſpecies of vermin, particularly fleas, which they never fail to deſtroy.

Linnæus enumerates about forty ſpecies of Bugs, to which he gives the general name of cimex.

Bug, Acolalan. An inſect reſembling the common Bug, but leſs nauſeous in it's ſmell. It is very ſmall; and, when full grown, begins to aſſume wings. It is extremely miſchievous among cloaths, where it often commits it's depredations unperceived.

Bug, Caterpillar. A name given by Bonnet to a ſmall ſpecies of caterpillar which ſmells exactly like a Bug. This, however, is not the only ſpecies which yields a ſenſible ſmell; for there is one of the middle-ſized, ſmooth kinds, which, at the time of it's change into the chryſalis ſtate, emits a very pleaſant roſe-like ſcent; and their exuviæ retain that ſmell for years together. There is alſo another which ſmells ſtrongly of muſk.

Bug, Green and Yellow. This inſect is about the ſize of the common fly. The body is of an oval ſhape, conſiderably depreſſed, and black on the upper part; the feelers are ſlender, and of a greeniſh colour; the head, the breaſt, and the external wings, are of a bright green, but ſomewhat rough; and the belly is alſo green. The ſnout has four joints; within it is a briſtly tongue; and a yellow margin, or rim, ſurrounds the whole. This inſect is commonly found in kitchen-gardens.

Bug, Narrow Water, or Boat-Fly. This inſect is nearly an inch long, and the ſixth of an inch broad. The head is blunt and yellow; the eyes are brown; the breaſt is large, and of a yellow colour, but ſomewhat tranſparent; the ſhield is black, with a gloſs like velvet; the external wings are of a yellowiſh grey, ſpotted with black round the edges; the interior wings are whitiſh and tranſparent; the fore-feet are ſhorter than thoſe in the middle, and the hinder ones are much longer than either. The ſnout is long, and ſharp-pointed; the feelers are very ſhort, conſiſting only of two joints; and the belly is black and hairy.

Bug, Compressed Water, or Boat-Fly. This ſpecies is nearly an inch long, and ſomewhat broader and more depreſſed than the former. The head and legs are yellow; the breaſt and the external wings are brown, with many fine ſlender tranſverſe ſtreaks of pale yellow; the under part of the body is yellowiſh; and the eyes are black.

Bug, Grey Water, or Boat-Fly. This inſect is extremely minute, being leſs by one half than a common louſe, and entirely of a whitiſh grey colour. The back is depreſſed, with a line running along the middle; the fore-legs are remarkably ſhort; the feelers are alſo very ſhort; but the hind-legs are long.

There are ſeveral other ſpecies of the Water Bug: the moſt remarkable of which are, the Black Water Bug of the Eaſt Indies; the Black and White Smaller Water Bug; the Broader Brown Water Bug; and the Little Yellowiſh-ſtreaked Water Bug.

Bug, Plant, or Chermes. The ſnout of this animal is placed on it's breaſt; the hinder part of the belly is pointed; there are four wings on the ſides; and the feet are adapted for leaping. Linnæus has enumerated eight ſpecies; namely, thoſe of the elm, maple, beech, alder, fir, willow, aſh, and nettle. Beſides theſe, he mentions another, which is ſuppoſed to breed in the head of the ceraſtes, or horned ſerpent.

Bug, Fir-Tree. This ſpecies is of an oblong figure, and of a whitiſh colour. They have ſmall heads; and pretty large prominent eyes of a brown hue, with a ſmall black ſpeck between them. The feelers are very ſmall; there is a ſort of down near the tail; and the wings are thin and whitiſh. When concealed in the leaves of the fir-tree, they make a prominence reſembling a ſtrawberry.

Bug, Grass. This is a pretty large inſect, conſidering it's kind. The body is a little depreſſed and broad; the head is very obtuſe; the breaſt is grey, and variegated with white lines; and the feelers are white, except at their tops, where they aſſume a blackiſh appearance. This creature pretty much

reſembles a graſshopper, or rather a cricket, except that the wings are not cruciated. Excluſive of theſe, naturaliſts notice the Apple-tree Bug, and the Germander Bug; and probably there are particular ſpecies belonging to many other trees.

Bug, Oblong Dung. Linnæus deſcribes this Bug as a cimex with a crooked trunk, having feelers like hairs at the ends, and an oblong black body. It feeds on flies, and other inſects; and is furniſhed with ſix feet, the hindermoſt of which are very long, clavated, and thick near the claws. It is covered with filth; of which, however, it can eaſily diveſt itſelf, and ſo change it's appearance as to deceive the eye of the ſpectator. It is ſhaped ſomewhat like a ſpider; and has a hairy furrowed body, of an aſh colour, which appears like earth when it is dry. The head and feelers are deſtitute of hair, except the laſt joint of the feelers; and the trunk is crooked, and incurvated.

Bug, Green Stove. This inſect, which is of a flat oval ſhape, and a greeniſh colour, firmly adheres to the bark or leaves of trees. The back is a little prominent; the belly is hollowed, the fore-part being blunt, and the hind forked. So little does it reſemble an animal externally, that it was long taken for an excreſcence on the plant on which it was found. It appears in a kind of ſhell, or covering, which incloſes the body of the inſect. It is furniſhed with ſix very ſlender legs; the eyes are ſmall and black; and the feelers are very ſlender. This animal poſſeſſes the faculty of thruſting out it's legs at pleaſure, and ſometimes moves ſlowly about; however, it generally adheres to the leaf of the tree, continuing in the ſame place, and extracting the juice. The male is a ſmall fly, much inferior in ſize to the female: it has a ſlender oblong body, and long legs; the feelers are ſhort; and the wings are white. The female is commonly found on orange and lemon-trees preſerved in ſtoves in green-houſes; and is probably the ſame with the coccus of the citron-tree, or the ſhielded louſe of Linnæus.

BUGEE. A very ſcarce ſpecies of monkey ſometimes imported from India, it's native country, into England, and publicly exhibited. It is about the ſize of a beaver, and nearly of the ſame colour; but it's tail and claws prove it to be wholly of the monkey kind.

BUGELUGEY. A large ſpecies of lizard, called by Cluſius, and ſome other naturaliſts, by the indeterminate name of lacertus Indicus. It grows to the enormous length of four feet, and meaſures nine inches round. The tail is very long, and terminates in an extremely ſlender point.

BUGLOSSUS. A name often applied to the ſoal-fiſh.

BULIN. A ſpecies of ſea-ſnail.

BULL. The male of the cow kind. See Cow, Ox.

BULLA. A genus of univalve ſhells; whoſe general characters are, that the ſhell is ſub-oval, that the aperture is oblong and ſmooth, and that one end is a little convoluted.

Bulla, Wood. This ſhell is of an oval figure, tranſverſely ſtriated. It is narrower at the one end than the other, and a little umbilicated. The colour is dirty, and reſembles ſome ſorts of wood, whence the trivial name. The whole length of the ſhell is about two inches.

Bulla, Obtuse. The ſhell of this ſpecies is very brittle, and more obtuſe at the end; and the inner ſide folds over the columella, ſo as to render it inviſible.

Bulla, Cylindric. This ſpecies is white, of a cylindric figure, a little umbilicated at the end, and about twice the ſize of a grain of wheat.

Bulla, Open. One end of this ſhell is produced, and fuſiform; and the aperture is very wide.

The word Bulla alſo ſignifies a genus of worms of the order of teſtacea.

BULLCARD. An Engliſh name for the alauda non criſtata of Rondeletius; a ſmall ſea-fiſh caught on the Corniſh coaſts, and near the Iſle of Angleſey; called by Pennant the ſmooth blenny.

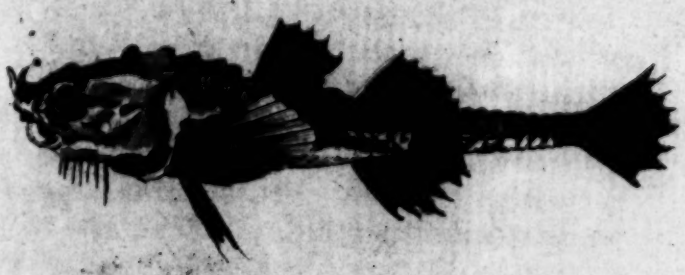
BULL-DOG. One of the moſt fierce and ſtrong of the canine race, having the noſe ſhort, and the under-jaw longer than the upper. The breed is in a manner peculiar to England; but, ever ſince the ſavage cuſtom of bull-baiting has happily been on the decline, it has ſuffered neglect. Such is the ſtrength and ferocity of theſe animals, that four of them have been known to maſter a lion; and when they are turned looſe on a bull, and have once properly ſeized him, nothing ſhort of the loſs of life, or the giving way of the part, can diſengage them. While that barbarous amuſement continued in vogue, various inſtances of ſavage fortitude have occurred in the feats of this breed, which would ſcarcely be credited in countries where the diverſions are more rational and elegant.

BULL-FINCH. A well-known bird of the ſparrow kind, the wild note of which is deſtitute of melody: but, when tamed, it becomes remarkably docile; and may be taught any tune by means of a pipe, or to whiſtle any notes in the trueſt manner, and ſeldom forgets it's acquirements. It ſoon becomes ſo very tame, as to attend it's maſter's call, perch on his ſhoulder, and go through it's muſical leſſons at command. It may even be taught to ſpeak: and ſome of theſe birds, thus inſtructed, are annually imported from Germany.

The Bull-Finch is about the ſize of a common ſparrow: the bill is ſtrong, ſhort, black, and crooked like that of a parrot; the tongue is likewiſe ſhort; the eyes are of a hazel colour; the head is large in proportion to the body; the breaſt is crimſon, as well as the jaws and the throat; but the top of the head, and the ſides of the bill, are of a fine ſhining black. Part of the neck, the ſhoulders, and back, are of a blueiſh aſh-colour, ſhaded with red; and the belly and rump are white. The exterior webs of ſome of the quill-feathers are red, and the interior of a fine gloſſy black; others are black with duſky edges, and of a blueiſh gloſs; and ſome again have their exterior edges white, forming a kind of white tranſverſe bar on each wing. The tail is two inches long, and of a ſhining black; the legs are of a duſky colour; and the claws are black. The male is diſtinguiſhed by the ſuperior blackneſs of his crown, and by the rich crimſon which adorns his breaſt, cheeks, and throat; while thoſe of the female are of a dirty colour. However, they are with difficulty diſtinguiſhed when young; but, by plucking a few feathers from the breaſt when the bird is about three weeks old, in ten days time the ſecret may be diſcovered; the growing naſcent plumage appearing of a fine crimſon, if a cock; but of a paliſh brown, if a hen.

Bull-Finches delight to feed on the buds of fruit-trees, ſuch as the apple, pear, and peach; but as they always ſelect the blowing buds, they are extremely noxious to gardeners; and are accordingly deſtroyed as often as they can be met with in the act of plundering.

Theſe



1. HIGHLAND BULL. 2. BULLÆ. 3. GREATER BULL-FINCH.
4. LITTLE BROWN BULL-FINCH. 5. NORTH AMERICAN BULL-FINCH.
6. BULL-HEAD. 7. ARMED BULL-HEAD.

Plate XVII

Published as the Act directs, by Harrison & Co. Jan.ry 22. 1786.

These birds breed very late in the ſpring, the young ones being ſeldom hatched before the middle of June. They uſually form their neſts either in gardens, orchards, parks, or other places which abound with trees; and conceal them with a conſiderable degree of addreſs. The hen lays four or five eggs, of a blueiſh colour, and ſprinkled at their largeſt ends with large dark ſpots of a brown or reddiſh hue. If the young are intended to be ſecured, they muſt not be removed before they are twelve or fourteen days old. They ſhould then be kept very warm and clean, and fed ſparingly every two hours from morning till night. Their food muſt be rape-ſeed, ſoaked in clean water eight or ten hours, and then ſcalded and bruiſed; after which it ſhould be mixed with an equal quantity of white bread, ſoaked in water, ſtrained, and afterwards boiled thick with milk. This preparation ſhould be made freſh every day; but when they are able to feed themſelves, they muſt be weaned from their ſoft meat as ſoon as poſſible, and then fed with rape and canary ſeeds. If they happen to be indiſpoſed, a blade of ſaffron ſhould be put into their water; and, while young, they ſhould be accuſtomed to the ſound of ſuch notes as they are intended to learn, which they will readily acquire.

BULL-FINCH, BRAZILIAN. This ſpecies is about the ſize of the lark, and has a ſtraight bill. The whole head, the throat, and the lower and middle part of the neck, are of a fine blood-colour; the back is grey, mixed with black feathers; the upper part of the bill is brown, the lower being of a light carnation; the legs are cinereous; the wings and tail are a mixture of black and grey; and the eyes have blueiſh pupils.

BULL-FINCH, GREATER, OF EDWARDS. The bill of this ſpecies, which ſeems to be a native of ſome part of America, is pretty thick towards the baſe, ſlightly arched on the upper part, terminating in a point, and entirely of a whitiſh colour. The top and ſides of the head, the upper part of the neck, the back, the wings, and the tail, are of a dark brown colour inclining to black, the feathers being edged with a lighter brown, which forms a very agreeable mixture. The throat, the under ſide of the neck, the breaſt, and the belly, are of a very fine ſcarlet colour; the ſuperior parts of the wings, and a little way down their ridges, are of the ſame colour as the breaſt; the inſides of the wings are duſky; the thighs, the lower belly, and the covert-feathers under the tail, are of a black brown colour; the tail is pretty ſhort in proportion to the ſize of the bird; the legs, the feet, and the claws, are of a light brown; and there are four toes on each foot.

BULL-FINCH, LITTLE BROWN. This curious little bird has a white bill. The top and ſides of the head, the upper part of the neck, the back, the wings, and the tail, are of a dark brown colour; the borders of the feathers are ſomewhat lighter than their centres; the inſides of the wings are of a light brown; the throat, the under ſide of the neck, the breaſt, the belly, the thighs, and the covert-feathers under the tail, are of a dull reddiſh orange; and the legs, the feet, and the claws, are of a dull brown.

BULL-FINCH, NORTH AMERICAN, THE GREATEST OF EDWARDS. This beautiful bird is ſeven inches long. The ſhape of the bill, and the colour of the breaſt, are like thoſe of the common Bull-Finch; the upper chap is black, arched, and ſomewhat longer than the lower; and the lower is of a reddiſh fleſh-colour, except the point, which is black. The head, the throat, the breaſt, and the rump, are ſcarlet; and from the noſtrils to the eyes on each ſide there runs a blackiſh line. The feathers on the hinder part of the neck and back are black, tipped with ſcarlet; the wings are black; the greater quill-feathers next the back are tipped and bordered with white, forming two oblique white bars acroſs each wing; the leſſer coverts of the wings are a little fringed with red; the belly and thighs are of a light aſh-colour; the tail is black above, but inclining to cinereous beneath; and the legs are of a blackiſh brown.

BULL-FROG. This very ſingular animal is a native of Carolina, and derives it's name from it's bellowing exactly like a bull, which excites the admiration of ſtrangers. Cateſby informs us, that it is of a deep brown colour, having a great number of dark ſpots mixed with others of a greeniſh red; and that it grows to a very large ſize. The eyes are brown; the irides are yellow; and under the eyes there are two round ears covered with thin membranes.

BULL-HEAD, or MILLER's THUMB. This fiſh is only four or five inches long. The head is of a roundiſh ſhape, large, broad, and depreſſed; and the gill-fins are round, and beautifully notched at their circumference. At the riſe of the covert of the gills on each ſide there is a crooked prickle. The mouth is large, and full of ſmall teeth; the back is yellow, with three or four black ſtripes; the belly is whitiſh; and the body is deſtitute of ſcales. The haunts of this fiſh are in clear and gravelly brooks and rivers, under ſtones, or in holes. It bites at a ſmall red worm all the ſummer ſeaſon; and is ſo remarkably ſtupid, that whatever number may be together, the moſt inexpert angler may catch them all. When young, it forms a deſireable bait for trout. The ſpawning-time is in April.

BULL-HEAD, ARMED. This fiſh, to which ſome naturaliſts give the name of the pogge, is very common on the Britiſh coaſts. It ſeldom exceeds five inches and a half in length, and but rarely attains to that ſize. The head is large, bony, and very rugged; the extremity of the noſe is armed with four ſhort upright ſpines; and on the throat there appear a number of ſhort white beards. The teeth are very minute; the body is octagonal, and covered with a number of ſtrong bony cruſts, divided into ſeveral compartments, the ends of which project into ſharp points, and form ſeveral echinated lines along the back and ſides. The firſt dorſal fin conſiſts of ſix ſpiny rays; the ſecond, which conſiſts of ſeven ſoft ones, is placed juſt behind the firſt; and the pectoral fins, which are broad and rounded, are compoſed of fifteen rays.

BULL-TROUT, called alſo the Sea-Trout. This ſpecies, like the ſalmon, migrates up ſeveral of the Britiſh rivers, ſpawns, and then reviſits the ſea. The body, which is thicker than that of the common Trout, weighs upwards of three pounds; the irides are ſilvery; the head is thick, ſmooth, and duſky, with a gloſs of blue and green; the back is plain, and of the ſame colour, but becomes more faint towards the ſide line; and the ſides, as far as the lateral line, are marked with large, diſtinct, irregular black ſpots: the lateral line is ſtraight; the ſides beneath the line, and the belly, are white; and the tail is broad, and even at the end.

end. The dorſal fin conſiſts of twelve rays, the pectoral of fourteen, the ventral of nine, and the anal of ten. The fleſh aſſumes a pale red colour when boiled, but is extremely well flavoured. This fiſh ſeems to be the ſcurff of Willughby.

BUNSING, or STINK-BUNSING. An animal peculiar to the Cape of Good Hope, which the Dutch affirm to be the moſt nauſeous in nature. It is of the ſize of a middling dog, and reſembles a ferret in ſhape. When cloſely purſued either by men or beaſts, it ſuffers them to approach pretty near, and then diſcharges ſuch an intolerable ſtench from it's poſteriors, that it almoſt overpowers thoſe who cannot immediately get beyond it's effect: and dogs, or other animals, when in purſuit of the Bunſing, are ſo affected with it, that they inſtantly turn aſide, and rub their noſes againſt the ſtumps of trees, or any thing elſe which is likely to deſtroy the ſmell.

The Dutch ſometimes kill theſe animals; but ſuffer them to remain on the ſpot where they fall, becauſe no perſon can endure to carry them off. When any of their filth happens to daub a perſon's cloaths, or is even touched with the point of the finger, the ſmell is with the utmoſt difficulty removed, though every expedient be uſed for that purpoſe.

The name of this animal, in Engliſh, ſignifies a ſtinking badger. Pere Xuchelli mentions a ſpecies of this creature that is found in Brazil, and which poſſeſſes the ſame nauſeous qualities, though in an inferior degree.

BUNTING. The Engliſh name of the emberiza alba, called by ſome naturaliſts calandra, cenchramus, alaudæ congener, and ſtrozello, or ſtrillozzo. The general characters of the family are, that the bill is ſtrong and conic, the ſides of each mandible bending inwards; and in the roof of the upper one there is a hard knob, with which nature has furniſhed theſe animals for the purpoſe of breaking and comminuting hard ſeeds, or other ſubſtances.

BUNTING, COMMON. This bird is a conſtant inhabitant of Great Britain; and, towards the approach of winter, aſſociates in flocks. It's bill is ſingularly conſtructed: the ſides of the upper mandible form a ſharp angle, bending inwards towards the lower; and in the roof of the former there is a hard knob, for the purpoſe of bruiſing it's food. The throat, breaſt, ſides, and belly, are of a yellowiſh white; the head, and the upper part of the body, are of a pale brown, tinged with olive; each of which, except the belly, are marked with oblong black ſpots; but, towards the rump, theſe ſpots become more faint. The quill-feathers are duſky, their exterior edges being of a pale yellow; the tail is a little forked, of a duſky hue, and edged with white; and the legs are of a pale yellow.

BUNTING, YELLOW. The bill of this ſpecies is of a duſky hue; the crown of the head is of a pleaſant pale yellow, in ſome almoſt plain, and in others ſpotted with brown; the hind part of the neck is tinged with green; the chin and throat are yellow; the breaſt is marked with orange red; the belly is yellow; the leſſer coverts of the wings are green, the others being duſky, and edged with ruſt-colour; the back is of the ſame colours; the rump is of a ruſty red; the quill-feathers are duſky, their exterior ſides being edged with yellowiſh green; the tail is a little forked; the middle feathers are brown, the two middle-moſt being edged on both ſides with green, but the others on their exterior edges only.

The female of this ſpecies builds a large flat neſt on the ground with moſs, dried roots, and horſe-hair, interwoven; and lays ſix eggs of a white colour, veined with a dark purple. It is one of our moſt common birds; and in winter frequents farm-yards with other ſmall birds.

BUNTING, REED. This bird ſhews a predilection for marſhy places, and lodges commonly among reeds, from whence it receives it's name. It's neſt is contrived with wonderful art, being faſtened to four reeds, and ſuſpended by them about three feet above the ſurface of the water: the cavity of the neſt is deep, but narrow; and the materials of which it is conſtructed conſiſt of ruſhes, bents, and hairs. It lays four or five eggs, of a blueiſh white, marked with irregular purpliſh veins, eſpecially on their larger ends. It is much admired for it's ſong; and, like the nightingale, cheers the night with it's melody.

The head, chin, and throat, of the male Reed Bunting, are black; the tongue is livid; and at each corner of the mouth there is a white ring, which encircles the head. At the approach of winter the head changes to hoary; but, on the return of ſpring, it reſumes it's former jettyneſs. The under ſide of the body is wholly white; the back, the coverts of the wings, and the ſcapular feathers, are black, deeply bordered with red; the two middle feathers of the tail are of the ſame colours; the three next are black; and the exterior web, and part of the interior of the outmoſt feathers, are white.

The head of the female is ruſt-coloured, ſpotted with black: it is deſtitute of the white ring round the neck; but, in other reſpects, it reſembles the male.

BUNTING, TAWNY. This ſpecies is found in different parts of England, but is not very common. Their breeding-place ſeems yet to be unknown; and, from the circumſtance of their ſometimes appearing white, are frequently miſtaken for white larks. The length of this bird is about ſix inches and a half, and the breadth twelve inches and upwards. The bill is very ſhort, and yellow, except at the point, which is black. The crown of the head is of a tawny colour; the whole neck is a paler ſhade of the ſame colour; the throat is almoſt white; the upper part of the breaſt is of a dull yellow; the breaſt, and entire under-part of the body, are white, daſhed with a yellowiſh tinge; the back and ſcapular feathers are black, edged with a pale reddiſh brown; and the rump and covert-feathers of the tail are white on their lower half, and yellow on their upper. The tail is a little forked, and compoſed of twelve feathers; the three exterior feathers are white; the outmoſt is marked with a duſky ſpot on the exterior ſide; the third is marked with the ſame colour on both ſides of the tip; and the reſt of the tail is entirely duſky. The wings, when cloſed, reach to about the middle of the tail; the colour of the firſt ſix quill-feathers is duſky, ſlightly tipped with a reddiſh white; their lower parts on both ſides are white; and in the ſeven ſucceeding feathers the duſky colour gradually gives place to the white, which, in the ſeventh, occupies the whole feather; the two next are wholly white; the reſt of the quill-feathers and the ſcapulars are black, edged with a pale red; the baſtard wing, and the outmoſt ſecondary feathers, are of the ſame colour with the quill-feathers; and the reſt, together with the coverts, are entirely white, forming one large bed. The legs,

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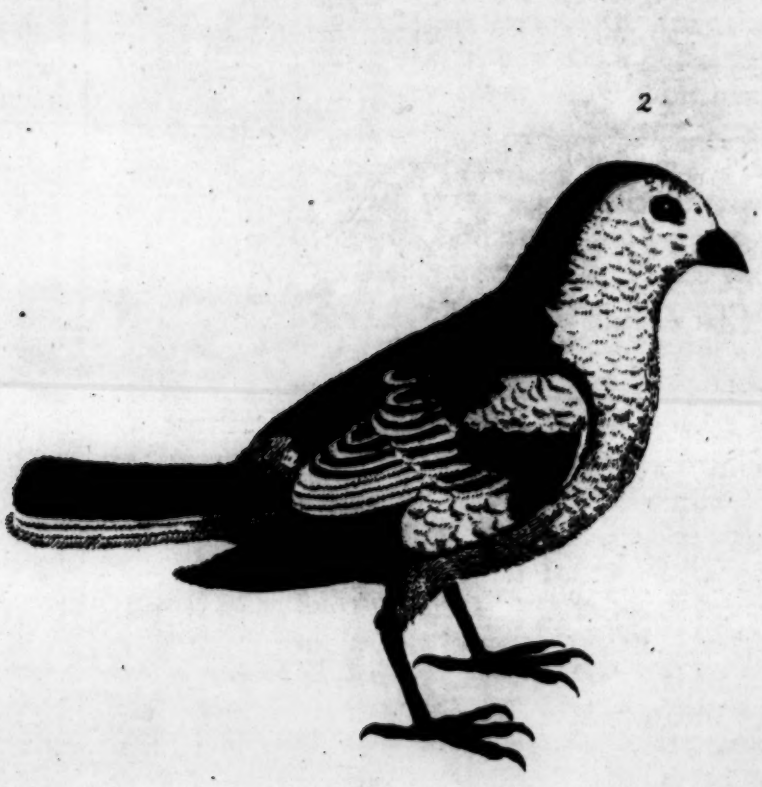

1. GREEN-HEADED BUNTING. 2. SNOW BUNTING. 3. BLACK AND WHITE BUTCHER-BIRD. 4. INDIAN FORK-TAILED BUTCHER-BIRD. 5. LEAST BUTCHER-BIRD. 6. RED-CRESTED BUTCHER-BIRD.

Plate XVI. Published as the Act directs, by Harrison & Co. Jan.y 15. 1785.

feet, and claws, are black; and the hind toes are extremely long, like thoſe of the lark, but by no means ſo ſtraight.

Bunting, Snow. In Scotland this ſpecies obtains the name of the ſnow-flake, from their appearance in ſevere weather, and deep ſnows. They arrive about that ſeaſon among the Cheviot Hills, and in the Highlands, in prodigious flocks. A few breed in the latter on the ſummits of the higheſt hills, in the ſame places with the ptarmigans; but the greateſt numbers migrate from the remoteſt north. They appear in the Shetland and Orkney iſlands; and multitudes of them, being wearied with the length of their voyage, often fall on veſſels in the Pentland Frith. Their arrival is a certain indication of approaching bad weather and ſtorms of ſnow, being driven by the cold from their uſual retreats. Their progreſs ſouthward is probably from Spitzbergen and Greenland, Hudſon's Bay, Lapland, Scandinavia, Iceland, the Faro Iſles, Shetland, Orkney, Scotland, and the Cheviot Hills. At that ſeaſon they viſit all parts of the northern hemiſphere, Pruſſia, Auſtria, and Siberia. In Auſtria they are caught and fed with millet; and, like the ortolan, grow exceſſively fat. In their flight, they keep very cloſe to each other, mingle together in a very confuſed manner, and fling themſelves collectively into a globular form; and then the fowler makes prodigious havock among them.

This bird weighs no more than an ounce and a half. The bill and legs are black; the forehead and crown are white, with ſome mixture of black on the hind part of the head; the back is of a full black; the rump is white; the quill-feathers are black, with white baſes; and the ſecondaries are white, with black ſpots on their interior webs. The inner feathers of the tail are black, the three exterior ones being white, with duſky ſpots near their ends; and from the chin to the tail is of a delicate white.

Bunting, Mountain. This bird is ſeldom ſeen in this kingdom; but, according to Johnſon, the bill is ſhort, thick, ſtrong, and black at the point, but the reſt of it is yellow. The forehead is of a dark cheſnut colour; the hind part of the head, and the cheeks, are lighter; the hind part of the neck and the back are cinereous, the latter being ſpotted with black; the throat is white; and the breaſt and belly are waved with flame-colour, but grey at the inſertion of the wings. The five firſt feathers are of a blackiſh brown, the reſt being white, with the tips of each daſhed with brown. The three exterior feathers of the tail are white, and the reſt of a dark brown; the feet are black; and the hind claw is as long again as any of the reſt. The breaſt of the female is of a darker colour than that of the male. This ſpecies has ſometimes been ſeen in Yorkſhire and Northamptonſhire.

Bunting, Green-Headed. This is a very curious and ſcarce bird. The bill is brown; the head and neck are of a dull green; the wings, breaſt, and belly, are a deep brown; the coverts of the wings and the back are a light brown intermixed with black feathers; the tail is brown; and the legs are of a yellowiſh hue. The breeding-place of this bird is entirely unknown.

BUPHAGA. A genus of the order of picæ, of which one ſpecies is found in Senegal.

BUPRESTES. A ſpecies of cantharides, which is of an oblong figure, emits a nauſeous ſmell, and bites very ſeverely. It is of the ſame nature with the common cantharides, or Spaniſh fly; and is ſaid to be very noxious to thoſe cattle which, in feeding, happen to ſwallow it.

In the Linnæan ſyſtem, they form a genus of inſects different from the eantharides; but belonging to the ſame order of coleoptera, and comprehending ſeveral ſpecies.

BURACO DE VELTA. The name of a fiſh caught on the Brazilian ſhores, uſually known among authors by it's local name guaibicoara.

BURBARUS. A name given by ſome ichthyologiſts to the common carp.

BURBOT. This fiſh, to which Ray gives the name of muſtela fluviatilis noſtratibus, bears ſome reſemblance to the eel in it's body, except that it is ſhorter and thicker. It's motions alſo reſemble thoſe of the eel; and it is extremely ſmooth, ſlimy, and ſlippery. The head is flat and diſagreeable, and ſhaped like that of a toad; the teeth are very ſmall, but numerous; and the irides are yellow. On the tip of the noſe there are two ſmall beards; on the chin there appears another; and the number of branchioſtegious rays is ſeven. The firſt dorſal fin is ſhort, and the ſecond is placed immediately behind it, extending almoſt to the tail; the pectoral fins are rounded; the ventral fins conſiſt of ſix rays; the vent is ſituated near the centre of the belly; the anal fin reaches almoſt to the tail; and the tail is rounded at it's extremity. The colour of the Burbot varies; ſome being duſky, and others of a dirty green ſpotted with black, and often with yellow; the belly, in ſome, is white, but the real colour is frequently concealed by the ſlime.

This fiſh is found in ſeveral of the Engliſh rivers, and is eſteemed very delicate food, though extremely diſguſting when alive. It is a very voracious creature, and preys on the fry and ſmaller fiſh. In the Lake of Geneva the Burbot is caught in great abundance, and is there called the lota. In foreign countries it ſometimes weighs ſix pounds; but in this it ſeldom exceeds two or three.

Burbot, Three-Banded. This ſpecies frequents the rocky ſhores of the Britiſh iſles, and is ſometimes caught with a bait. It grows to the length of a foot and a half, and weighs upwards of two pounds. The head is large and flat; the eyes are placed near the end of the noſe; the body is long, ſlender, and compreſſed ſideways, eſpecially towards the tail; and at the end of the upper jaw there are two beards, and one on the chin. The teeth, which are numerous and minute, are diſpoſed along the jaws in the ſhape of a broad plate; and in the roof of the mouth there is a ſet of ſmall teeth arranged in a triangular form. There are ſeven branchioſtegious rays: the firſt dorſal fin is lodged deep in a ſulcus juſt beyond the head, and conſiſts of a number of ſhort unconnected rays; and the ſecond riſes exactly behind it, and extends nearly to the tail. The pectoral fins are broad and round; the ventral fins are ſmall; the ſecond ray is the longeſt; the anal fin reaches almoſt to the tail; and the tail itſelf is rounded at the extremity. The ſcales are very ſmall; the body and head are of a reddiſh yellow colour, marked above the lateral line with large black ſpots; the back fin and tail are ſomewhat darker; and the ventral fin is of a brighter red; but all are maculated. The lateral line has a central incurvation, and then proceeds ſtraight to the tail.

Burbot, Five-Bearded. The ingenious Willughby makes this ſpecies only a variety of the former; but ſucceeding naturaliſts having ex-

amined several specimens, determine them to be distinct, as the spotted Burbot has never more than three beards, and the brown never less than five. There is also some difference in the form, as well as the colour, this species being thicker in proportion than the former: however, except in these particulars, and the number of the beards, there is a general coincidence in the parts of both. Four of these beards are placed on the upper-jaw, two at the very extremity of the nose, and two a little above them; and on the end of the lower-jaw there is a fifth.

These Burbots are of a deep olive-brown, with whitish bellies; and they grow to nearly the same size as the former. It is said that the Cornish fishermen, when desirous of taking these fish, whistle, and make use of the words Bod Bod Vean, as if by that means to facilitate their capture. However whimsical this circumstance may appear, it is certain that the fishermen of other countries make use of some magical terms, as they apprehend, to allure their prey.

BURGAU. A large species of sea-snail, of the lunar or round-mouthed kind. It is very beautifully lined with a coat of the nature of mother-of-pearl, which artificers take out, and use under the name of mother-of-pearl; though some call it burgaudine, from the name of the shell from which it is taken.

BURGHER-MASTER. A sea-fowl which has a crooked, yellow, narrow, thick bill, the under mandible being somewhat knobbed at the point. The nostrils are longish; there is a red circle round the eyes; the legs and claws are of a grey-ish colour, the latter being only three in number; and the former are very little shorter than those of the stork, though the body is almost as large. The tail is broad, and expanded like a fan when in the act of flying. The wings and back are of a purplish colour; but the tips of the wings, and the entire body, are white. It builds it's nest very high in the cliffs, or rocks; and is commonly seen on dead whales, feeding on the fat of these animals, where it is easily shot. It likewise preys on lambs, seizing them after the manner of a hawk. It's cry resembles that of a raven. It is a solitary bird; and delights in resting on the water, but does not appear to dive much.

BURN-COW, or BURST-COW. A genus of insects with filiform feelers, having the head half concealed within the breast, and being of a round-ish figure.

Burn-Cow, Yellowish Green. This insect is placed by some naturalists among the cantharides, except that it has a more oblong body. The cases of the wings are of a yellowish green, or rather gold colour; the legs are long and thickish; the eyes are globous and prominent; and from the forehead proceed two oblong antennæ, which are articulated. The head is small; the mouth is wide, hard, strong, and forked, being armed with teeth, which it uses with great address; the belly is of a longish figure; and the entire insect is about half an inch long. It will fight with beetles and efts, and wound them in the belly. It feeds on moss and heath, as well as on those weak insects which it vanquishes in fight.

Bellonius says that the Yellowish Green Burn-Cow is a winged insect, having a most offensive smell; that it resembles a cantharides, but is larger; and that it is so extremely venomous, that black cattle which feed in pastures where it abounds, are frequently killed by them.

There is another Burn-Cow with a shorter body, a broader belly, a sharper tail, a small head with prominent eyes, and a wide forked mouth. The cases of the wings are streaked lengthways, and the colour is a grass green, with a mixture of shining gold. It has eight legs, of a blackish colour, long in proportion to the body, and more slender than in the former species. The antennæ are smaller and more slender; and the smell is infinitely more disagreeable. It lives on flies and palmer-worms; is very injurious to cattle; and some affirm that, when taken internally, it's poisonous qualities prove mortal.

In Germany there are two other species; the one of a greenish gold colour, and the other of a yellowish black. The first resembles the yellowish green Burn-Cow, but is somewhat bigger; the cases of the wings are streaked with lines of a deep gold colour, shaded with a little green; and between the lines hollowish tubercles arise, which appear as if engraved. The yellowish black Burn-Cow has the same qualities with the former, except that it is of a different colour, a little bigger, and furnished with four antennæ.

Burn-Cow, Brownish Brassy. This species is small; the eyes are very large and prominent; the feelers are short; and the breast is broad, short, hollowed, and slightly marginated. The cases of the wings are very bright and glossy, and finely streaked with very elegant minute specks; the legs are slender and black, as well as the under part of the body; and the snout is prominent. It is commonly found among reeds.

Burn-Cow, Brassy and Clouded, with clavated feelers. This species is scarcely larger than a flea. The belly, and the lowest part of the body, are black; but the upper part is entirely of a brassy yellow, with an admixture of brown; and it has a brown spot on the back which touches both the cases of the wings. The breast is large, and marked with five oblique furrows; the head is almost hid under the breast; and the body grows narrower towards the tail. It does not appear that these two last species are dangerous to cattle.

Burn-Cow, Virginian. This insect is of a dusky, brassy colour, with spots on the wings; and is a pretty large species. The head is almost concealed under the breast; the breast is of a brassy colour, with a mixture of reddish brown; the cases of the wings are also of the same colour, but more slightly tinged with red; they are marked with four or five streaks; and on each there are two bright yellow spots, so disposed as to form a square figure when the cases are closed.

BURREL-FLY. This insect has an oblong body, divided into three principal parts; namely, the head, the shoulders, and the belly; which last has five or six annulations. It is entirely of a whitish colour, inclining to grey; and has a strong, brawny, long snout. In July and August it proves very troublesome to cattle. Mouset gives an account of a horse which, having been tied by a halter to a tree in a wood, was killed in the space of six hours by those voracious insects, which sucked up it's blood with great avidity.

Linnæus gives the name of tabanus to this species of flies; of which he mentions two varieties; the common tabanus, and the dim-sighted tabanus.

Ray mentions one which he calls the beautiful two-winged fly, with large white spots on the wings. It is of the size of the common house-fly; and has a brown head, breast, and body, except that there is a yellowish tincture under the roots of the wings.

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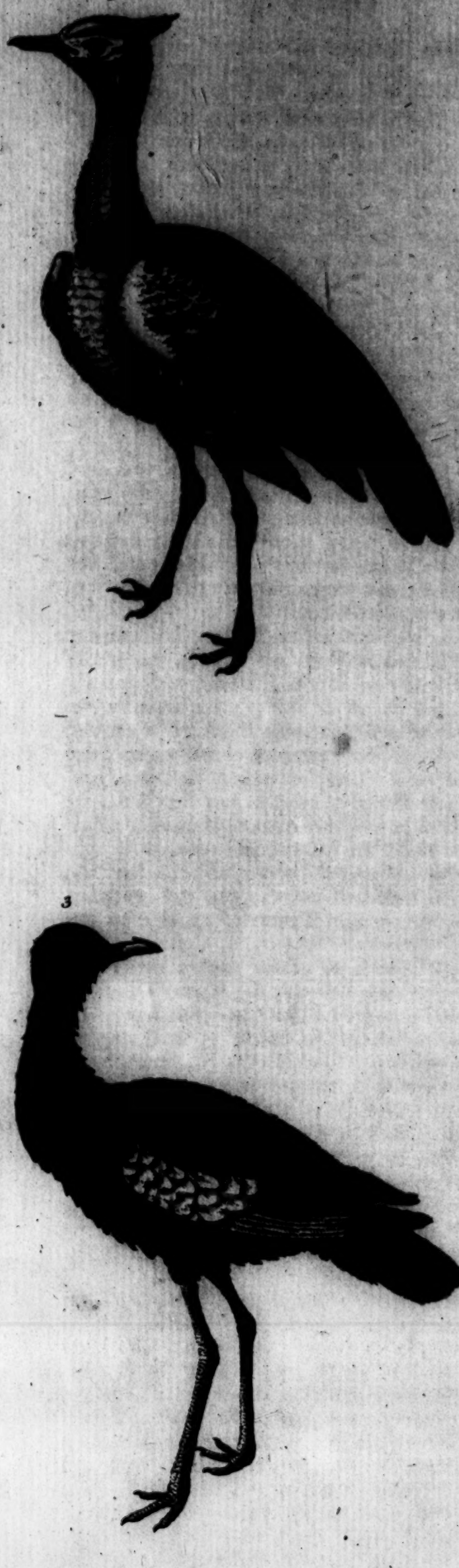

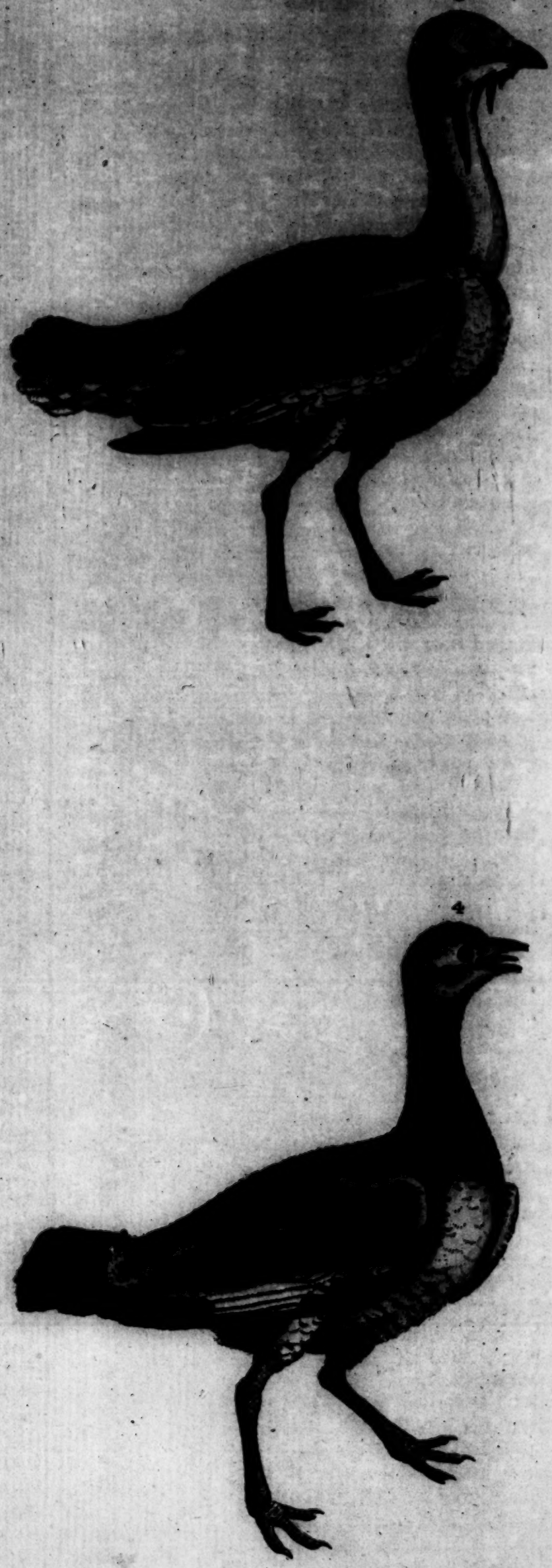

1. ARABIAN BUSTARD. 2. COMMON BUSTARD.

3. INDIAN BUSTARD. 4. LITTLE BUSTARD.

Plate XV.

Published as the Act directs, by Harrison & Co. June 8. 1785.

wings. The eyes are large, and of a bright lucid green, with a few black ſpecks.

Other authors mention the black tabanus variegated with yellow, and having brown legs; the brown tabanus, with iron-grey ſides, and three brown ſtreaks over the eyes; the grey tabanus, with a tranſverſe line over the eyes; the brown tabanus, with grey wings variegated with ſmall white ſpots, green eyes, and four brown lines running acroſs them; the long-bodied tabanus; the tabanus with a ſhort body and tranſparent wings; and the black tabanus with tranſparent wings.

BURROUGH DUCK. A common Engliſh appellation for the tadorna.

BUSELAPHUS. An animal of the goat-kind, called alſo moſchelaphus. It is of an intermediate ſhape between the ſtag and the ox kind. The head and ears are long; the legs and feet are ſmall; the tail is about a foot long, and ſhaped like that of a heifer; the hair of the whole body is of a tawney, or reddiſh yellow colour; and the horns are black, ſmooth at the tops, but rounded in every other part. It is extremely tame, docile, gentle, fond of play, and ſwift of foot; and, except in ſize, reſembles the common antelope.

BUSTARD, OTIS. A large bird which, in the Linnæan ſyſtem, makes a diſtinct genus of birds of the order of grallæ; the diſtinguiſhing characters of which are, that the feet have only three toes each, and thoſe all placed before; that the upper mandible of the bill is arched; that the noſtrils are ovated; and that the tongue is bifid.

The Buſtard is the largeſt land-bird that is a native of Britain. It is much larger than the turkey; the male, at a medium, weighing twenty-five pounds. It's breadth is about nine feet, and it's length almoſt four. The male has a tuft of feathers, about five inches long, on each ſide of the lower mandible; the head and neck are cinereous; the back is barred tranſverſely with black, bright, and ruſt-colour; the greater quill-feathers are black; the belly is white; the tail, which conſiſts of twenty feathers, is marked with broad bars of red and black; and the legs are of a duſky colour.

The female is about half the ſize of the male. The crown of the head is of a deep orange colour, traverſed with black lines, and the reſt of it is brown. The lower part of the neck before is aſh-coloured; but, in other reſpects, it reſembles the male, except that the colours of the back and wings are brighteſt.

This bird was once more numerous than it is at preſent; but the increaſed cultivation of the country, and the extreme delicacy of it's fleſh, have greatly thinned the ſpecies. Indeed, it would probably have been long ſince exterminated, but for it's peculiar manner of feeding. Had it continued to ſeek ſhelter among our woods, it muſt have been deſtroyed in proportion as they were cut down; if in the foreſt, the fowler might have approached it unobſerved; and the bird, from it's magnitude, would have afforded ſuch an excellent mark, that it could not eaſily have been miſſed. But the Buſtard now inhabits only the open and extenſive plains; where it is plentifully ſupplied with food, and where every invader of it's repoſe may be ſeen at a conſiderable diſtance.

Theſe birds are frequently ſeen in flocks of more than fifty, on the extenſive downs of Saliſbury Plain; on Newmarket and Royſton heaths, in Cambridgeſhire; the Dorſet uplands; and even as far north as March, or Lothian, in Scotland.

In thoſe diffuſive plains where there are neither woods nor hedges to ſcreen the ſportſman, the Buſtards enjoy a kind of indolent ſecurity. Their food is compoſed of the berries which grow among the heath; and of large earth-worms, which appear in great numbers on the downs before the riſing of the ſun during the milder months of the year. Thus ſituated, in vain does the fowler creep forward, in order to approach them; they have always centinels placed on proper eminences, which are inceſſantly on the watch, and warn the flock of the ſmalleſt appearance of danger. However, it ſometimes happens that, though theſe birds cannot be reached by guns, they are run down by greyhounds. As they are voracious and greedy, they often ſacrifice their ſafety to their appetites; and, being generally very fat, they are unable to fly without much preparation. When the greyhounds therefore come within a certain diſtance, the Buſtards run off, flap their wings, and endeavour to gather air enough under them to riſe: in the mean time, the hounds are continually gaining ground; and, at laſt, it is too late for the birds to think of obtaining ſafety by flight. However, they run very faſt; and, when on the wing, can fly ſeveral miles without reſting.

As there are but few places where Buſtards can at once find proper food and ſecurity, they generally continue near their old haunts, ſeldom wandering above twenty or thirty miles from home. As their food is replete with moiſture, it enables them to live on thoſe parched plains where there are ſcarcely any ſprings of water. But, as a ſecurity againſt drought, Nature has furniſhed the males with a pouch, the entrance of which lies immediately under the tongue, and which will contain near ſeven quarts of water; and this they fill, probably in order either to ſupply the hen when ſitting, or the young till they are capable of flying.

Like all other birds of the poultry kind, Buſtards change their mates at the ſeaſon of incubation, which is about the latter end of ſummer. If the number of males and females is equal, they ſeparate in pairs; but, ſhould the males be moſt numerous, they fight till reduced to an equality. They build their neſts on the ground, by ſcraping holes in the earth; and ſometimes line them with a little ſtraw or graſs. They lay only two eggs, which are about the ſize of thoſe of a gooſe, and of a pale olive-brown, with dark-coloured ſpots. They are about five weeks in hatching; and the young ones run about the moment they are emancipated from their ſhells.

Buſtards generally live about fifteen years; but they cannot be propagated in a domeſtic ſtate, as it is impoſſible to ſupply them with a ſufficiency of that food in which they principally delight. They aſſemble in flocks in the month of October, and keep together till April. In winter, as their food becomes more ſcarce, they ſupport themſelves indiſcriminately by feeding on moles, mice, and even little birds, when they can ſeize them. For want of other food, they likewiſe are contented to live on turnip-leaves, and other ſucculent vegetables. In ſome parts of Switzerland, they are found frozen in the fields in ſevere weather; but, when removed to a warm ſituation, they generally recover.

BUSTARD, ARABIAN. This bird is about the ſize of a turkey; but has a longer neck and legs, as well as a more ſlender body, than the common Buſtard.

tard. The bill, which is about three inches and a half long from the extremity to the angles of the mouth, is of a light horn-colour, and a little darkiſh at the point; the noſtrils are long, and placed near the forehead; the eyes are of a dark colour; and the fore-part of the head is white. Above the eyes there is a black line, which terminates in a point towards the forehead backwards; it gradually encreaſes in breadth, and forms a ſort of black creſt, from which proceeds a ſhort black line, reaching almoſt to the hinder part of the eye. The fore part of the neck is cinereous, with ſmall tranſverſe lines of a darker colour; and the hinder part, as well as the back, is brown, with fine tranſverſe blackiſh lines. The coverts of the wings are of the ſame colour with the back; the tips of the feathers, which are white, form ſemi-lunar ſpots; and the ridge of the wing, in the upper part, is white, from which proceeds a broad white bar, ſprinkled with ſmall black ſpots, ſeparating the covert from the quill-feathers. The baſtard-wing is black, except that the feathers have white tips; the foremoſt of the prime-feathers are black, and the middlemoſt are ſpotted with black and white; the inner quills next the back are of the ſame colour; the breaſt, belly, thighs, and the entire underſide, are of a pure white; the ſuperior part of the tail is of the ſame colour with the back, but the exterior webs of the outmoſt feathers are partly white; the under-ſide of the tail has a black bar acroſs it, near the tips of the feathers; the legs are pretty long; the toes, which are three in number, are ſhort, and ſtand forward; the legs are bare of feathers for ſome ſpace above the knees; both the legs and feet are covered with a ſcaly ſkin of a dirty white or lightiſh brown colour; and the claws are of the ſame. This bird is a native of Mocha, in Arabia Felix.

BUSTARD, INDIAN. This bird is about twenty inches in height, and is more ſlender in proportion than any other bird of the kind. The bill is of a whitiſh colour, and longer than that of the Engliſh Buſtard; the ſides of the head are of a bright brown; but the top of the head, and the whole neck, are covered with black looſe hanging feathers. The back, rump, and tail, are of a light brown; but on the latter there are tranſverſe black bars. All the covert-feathers of the wings are white, except the ſmaller ones about the joint, which are edged with black. The greater wing-feathers neareſt the back are browniſh, ſpotted with black; and the middle quills are white, with tranſverſe bars ſpeckled with black. The greater quills are white on their exterior webs, and the tips gradually become of a dark brown aſh-colour. The whole of the under-ſide, from the breaſt to the tail, is cloathed with black feathers. The legs are long, and the toes ſhort; the latter are three in number; and the former are bare a conſiderable diſtance above the knee. The toes all point forward, as in other birds of this kind, and are covered with whitiſh ſcales; but the claws are duſky.

This bird is an inhabitant of Bengal, in the Eaſt Indies; and was firſt deſcribed by Edwards, who took it from a drawing in the poſſeſſion of Dr. Mead.

BUSTARD, LITTLE. This bird, to which Willughby gives the name of the field-duck, is about the ſize of a pheaſant. The bill is of a fleſh colour at the baſe, and black at the point; the head, the back part of the neck, the back, and the coverts of the wings, are brown, marked with irregular ſpots of black; the throat is white; and the fore-part of the neck is of a lightiſh brown, with a duſky mixture. The covert-feathers on the inſide of the wings, and the ridges of the wings, are white; and the outer quills are white at their bottoms, but black at their points. The breaſt and ſides are white, ſpotted with black; the belly and thighs are wholly white; and the tail-feathers are brown, ſpeckled with very ſmall ſpots of white, and barred with tranſverſe black lines. It has only three toes, which all ſtand forward; and the legs and feet are covered with yellow ſcales.

The Little Buſtard has ſometimes been found in this iſland, but is by no means common: it is, however, very plentiful in France. Dr. Shaw, in his Travels to Barbary and the Levant, has given a figure and deſcription of this ſpecies, which the Moors call rhaad, or ſaf-ſaf-rhaad; that name, in their language, denoting thunder; and ſuppoſed to have been given to this bird from the noiſe it makes in ſpringing from the ground, as ſaf-ſaf very naturally expreſſes the beating of the air when it is got on the wing.

BUTCHER-BIRD. The Engliſh name of the lanius, called alſo the ſhrike, the ſmalleſt of all the European birds of prey, yet very fierce and deſtructive.

The greater Butcher-Bird is only about the ſize of a blackbird. It's bill, which is black, is about an inch long, and hooked at the end; to which mark, together with it's carnivorous appetite, it is indebted for being ranked among rapacious birds: but it's ſlender legs and feet, and it's toes, which are formed differently from thoſe of other birds of prey, ſeem to make it the connective between thoſe birds which live wholly on fleſh and ſuch as live principally on grain and inſects. Indeed, it's habits ſeem to correſpond exactly with it's conformation, as it feeds indiſcriminately on fleſh and inſects, and, in ſome meaſure, is found to partake of a double nature. It's appetite for the former, however, is moſt prevalent; for when it can obtain fleſh, it always gives it the preference to inſects. Thus circumſtanced, the life of this bird is a continual ſeries of combat and oppoſition; it's ſize being too inſignificant to alarm ſome of the ſmaller birds of the foreſt, it frequently meets with antagoniſts who are willing to try their ſtrength, and it never declines the engagement. It is aſtoniſhing to behold with what intrepidity this little creature will engage the pie, the crow, and the keſtril; all of which are conſiderably larger than itſelf, and ſometimes prey upon fleſh in the ſame manner. The Butcher-Bird, however, not only fights on the defenſive, but frequently begins the attack, and always with advantage; particularly when the male and female unite to protect their young, and to drive away the more powerful birds of rapine. They do not, at this ſeaſon, wait the approach of their invaders; it is ſufficient that they ſee them at a diſtance preparing for the aſſault. They immediately ſally forth with loud cries, and attack them with uncommon fury. They generally come off victorious in theſe conteſts; though it ſometimes happens that they fall to the ground with their adverſaries, and the combat ends in the deſtruction both of the aſſailants and the defenders. The moſt redoubtable birds of prey are on friendly terms with the Butcher-Bird; the kite, the buzzard, and the crow, ſeem rather to fear than wiſh to offend it. Nothing diſplays more the reſpect paid to this claim of courage, than to ſee this little bird, ſo contemptible

contemptible in appearance, fly in company with the falcon, and the other tyrants of the air, regardleſs either of their power or reſentment.

The Butcher-Bird ſeizes ſmall birds by their throats, and ſtrangles them in an inſtant; the Germans therefore give it the name of the wurchangel, or the ſuffocating angel. When it has thus killed any birds or inſects, it fixes them on ſome neighbouring thorn, and then pulls them to pieces with it's bill. If confined in a cage, it treats it's food in much the ſame manner; ſtriking it againſt the wires before it attempts to devour it. Nature has not furniſhed it with ſtrength ſufficient to tear it's prey to pieces with it's feet, as the hawks do; and it is therefore obliged to have recourſe to the above expedient. During ſummer, ſuch of the Butcher-Birds as conſtantly reſide here, remain among the mountainous parts of the country; but in winter they deſcend into the plains, and approach nearer to human habitations. The neſts of the larger kinds are built in the higheſt trees; but thoſe of the ſmaller are concealed in buſhes in the fields, and hedge-rows. They lay about ſix eggs, which are white, encircled at their larger ends with rings of a browniſh red colour. The outſides of their neſts are compoſed of white moſs interwoven with long graſs; their inſides are well lined with wool; and they are uſually fixed among the forked branches of trees. When the young are produced, the female feeds them with caterpillars and other inſects; but in a ſhort time afterwards ſhe accuſtoms them to fleſh, which the male is very aſſiduous in procuring.

In their parental care, they differ from moſt other birds of prey; for, inſtead of driving out their young from their neſts to ſhift for themſelves, they carefully attend them, and do not forſake them even when they are capable of providing for themſelves; and the whole brood live together in one family. Each family uſually conſiſts of the male, female, and five or ſix young ones; peace and ſubordination is preſerved among them; and they uſually hunt together. Theſe birds are eaſily diſtinguiſhable at a diſtance, not only from their being in ſmall parties, but from their peculiar manner of flying, which is ſeldom direct, or ſideways, but generally moving up and down.

Butcher-Bird, Greater. This ſpecies weighs about three ounces, and is about ten inches long and fourteen broad. It's bill is one inch long, black, and hooked at the extremity; the noſtrils are oval, covered with black briſtles pointing downwards; the head is very large, and the muſcles which move the bill are ſtrong and thick. The crown of the head, the back, and the coverts on the joints of the wings, are cinereous; the reſt of the coverts are black; the quill-feathers are black, with a broad white bar in the middle of each; and all of them are tipped with white, except the four firſt, and four of thoſe next the body. The tail is compoſed of twelve feathers, the longeſt of which is in the middle; each ſide of the head is white, with a broad black ſtroke croſſing from the bill to the hind part of the head; the throat, breaſt, and belly, are of a dirty white; and the legs are black. The female is of the ſame colour with the male, except on the breaſt and belly, which are marked with numerous ſemicircular lines.

Butcher-Bird, Red-Backed. The male of this ſpecies weighs about two ounces, and the female ſomething more. The length of the male is ſeven inches and a half, and the breadth eleven inches; the head and the lower part of the back are of a fine light grey; and a broad black ſtripe runs acroſs the eyes from the bill. The upper part of the back and the coverts of the wings are of a bright iron colour; the breaſt, belly, and ſides, are of an elegant bloſſom colour; the two middle feathers of the tail are the longeſt, and entirely black, and the lower parts of the others are white. In the female, the ſtripe acroſs the eyes is of a reddiſh brown; the head is of a dull ruſt colour inclining to grey; the breaſt, belly, and ſides, are of a cream colour, marked with ſemicircular duſky lines; and the tail is of a deep brown, except that, in both the male and female, the exterior webs of the outward feathers on each ſide are white. Theſe birds build their neſts in low buſhes, and lay about ſix white eggs, encircled on their larger ends with browniſh red rings.

Butcher-Bird, Cream-Breasted, frequently called the Wood-chat. The bill is of the colour of horn; the feathers which ſurround the baſe are whitiſh; a black line croſſes the eyes, and falls downwards on each ſide of the neck; the head, and the hind part of the neck, are of a bright bay; the upper part of the back is duſky; the coverts of the wings and the tail are alſo duſky; the quill-feathers are black, with a white ſpot on each towards the bottom; the throat, breaſt, and belly, are of a cream colour; the two middle feathers of the tail are black; and the exterior edges and tips of the reſt are white. In the female, the upper part of the head, the neck, and the body, are reddiſh, ſtriated with brown; the lower parts of the body are of a cream colour, with rays of brown; and the tail is reddiſh, inclining to brown, and tipped with red.

Butcher-Bird, Crested. The bill of this bird is ſomewhat like that of a hawk, but longer. Behind each eye there is a black ſpot, in ſhape like a creſcent; black briſtles project round the baſis of the upper mandible of the bill; the creſt, or crown of the head, is of a reddiſh colour; the upper ſide of the neck, the back, the rump, and the upper ſide of the tail, are red, or ruſſet, but not ſo vivid as the creſt. The ſides of the head round the eyes, the throat, breaſt, belly, thighs, and coverts under the tail, are of a dirty pale orange colour, with tranſverſe duſky lines; the wings are brown, the greater feathers being ſomewhat darker than the coverts, and edged with a lighter brown; the legs, feet, and claws, are black; the under ſide of the tail is of a clay colour, the middle feathers being the longeſt; and the ſide feathers gradually decreaſe in length.

This bird is a native of Bengal, where it is called charah.

Butcher-Bird, Least. This bird reſembles the long-tailed tit-mouſe, and is hardly larger; an evident proof that an animal's courage or rapacity does not depend on it's ſize. The bill is yellow, ſhort, ſtrong, and convex; the circle round the eyes is of a bright orange colour; and from the baſis of the bill riſes a broad black bar, which encircles the eye, and tending downwards below it, terminates in a point. The throat and ſides of the head are white; the crown of the head is of a blueiſh aſh colour; the breaſt is faintly tinctured with a bloſſom colour; the beginning of the belly is whitiſh, the thighs, and thoſe parts towards the vent, becoming darker; the ſides under the wings are clouded with orange colour; the covert-feathers under the tail are black; the upper ſide, neck, back, and tail, are of a red brown, inclining to

orange; the greater quills of the wings are black, edged with white; the inner next the back are black, edged with orange; the firſt row of the upper covert-feathers of the wings exactly correſponds in colour with the quills they cover, though in the orange-hue they are tipped deeper and brighter than the quills, and form a bar of orange acroſs the wings; the leſſer coverts are black; the ridges of the wings are white; the inferior covert-feathers of the wings are of a yellowiſh white; and between the back and the upper coverts of the wings a few light or whitiſh feathers are intermixed. The tail conſiſts of twelve feathers, of which the middlemoſt are the longeſt, and gradually ſhorten towards the ſides, till they become one half ſhorter than thoſe in the centre; the inferior ſide of the tail declines from an orange to a cinereous colour; and the legs and feet are black. The hen differs from the cock in having no black marks round the eyes; the coverts under the tail are of a light brown colour; the top of the head is of a dirty brown; the back is ſprinkled with ſome duſky ſpots, tending lengthways; and the point of the bill is black.

This bird, though not very common, has been diſcovered in different parts of England; and ſeems chiefly to frequent a marſhy ſoil.

Butcher-Bird, Fork-Tailed Indian. This ſpecies has a thick, ſtrong bill, ſomewhat arched, and the upper mandible overhangs the lower. The baſis of the upper mandible has ſeveral ſtiff hairs round it, projecting forwards; both the upper and the lower mandibles are of a duſky brown colour, lighter towards their baſes, and gradually becoming darker towards their points. The whole head, neck, back, and covert-feathers of the wings, are of a bright ſhining black, reflecting blue, purple, and green, as they are turned and expoſed to different lights. The greater quills, with ſome of the firſt row of covert-feathers next above them, are of a ruſty black, without any luſtre; but the quills next the body are of the colour of the head and back. The tail-feathers are ſhorteſt in the middle, and of a dull ruſty black colour; the whole belly, thighs, and covert-feathers under the tail, are white; the ſides and thighs are ſlightly clouded with duſky ſpots; and the legs, feet, and claws, are of a blackiſh colour.

This bird, which, from it's peculiar formation, ſeems as proper to be referred to the magpie claſs as that of the Butcher-Birds, is a native of India, and is there called ſingah.

Butcher-Bird, Black and White. This beautiful bird is a native of Surinam, in South America. Near the head the beak is pretty thick, but grows leſs towards the point, and is of a duſky colour. The upper mandible has a ſlight incurvation downwards, near the end, or tip, and overhangs the lower; and on each ſide of the point of the upper mandible there is a ſmall notch or angle. The feathers at the baſe of the beak point forwards, and partly ſhade the noſtrils; the plumage all over the head, body, wings, and tail, is black and white, with tranſverſe bars or marks; the covert-feathers on the inſides of the wings are almoſt white, having a very ſmall proportion of black confuſedly intermixed; the interior webs of the quills have white ſpots; and their inſides, as well as the under ſide of the tail, are almoſt of the ſame colour with the upper. The tail is compoſed of ten feathers; the exterior toe of each foot adheres to the middle one near it's bottom; the legs, feet, and claws, are duſky; and each ſingle feather, all over the body, is marked with ſeveral tranſverſe bars of black and white.

BUTEO. Another name for the buzzard.

BUTORIUS. A name ſometimes given to the ardea ſtellaris, or bittern.

BUTRO. The name of a wild bull.

BUTS-KOPF. This fiſh, to which ſome naturaliſts give the name of the flounder's head, is beſt known in England under the appellation of the grampus. The ſnout, fins, and tail, reſemble thoſe of the dolphin; but the body is more than four times as thick, eſpecially about the belly. It is eighteen feet long, and upwards of ten feet in circumference. The ſnout is flattiſh, and reverts upwards; the lower lip is ſo thick, that it falls from the upper as the fiſh lies along; and the mouth is armed with forty teeth, of which the foremoſt are blunt and ſlender, but the hinder are ſharp and thick.

BUTTERFLY. In Latin, Papilio. A numerous genus of inſects, furniſhed with mealy wings and ſpiral mouths, which undergo ſeveral transformations before they arrive at their perfect ſtate. The caterpillars proceed from the eggs; theſe change into the chryſalides, or aureliæ; and then the Butterflies appear, which, from their beautiful and ſurprizing variety of colours, may be regarded as ſome of the greateſt curioſities in natural hiſtory, and therefore require a connected deſcription through their various gradations.

Caterpillars, which conſtitute almoſt one-third part of inſects in general, may eaſily be diſtinguiſhed from maggots, or worms, by the number of their feet; as well as by their producing Butterflies, or moths, the firſt of which are called diurnal, and the latter nocturnal inſects. When the ſun calls forth vegetation, and vivifies the various eggs of inſects, the caterpillars are the firſt which appear; and are accordingly ſeen on every vegetable and tree, eating their leaves, and preparing for a ſtate of greater perfection. They have feet both before and behind; which not only enable them to move forward, but alſo to climb upwards on vegetables, and to expand themſelves from the boughs and ſtalks, in order to reach their food at a diſtance. All reptiles of this claſs have from eight to ſixteen feet; and this peculiarity alone may ſerve to diſtinguiſh them from the worm tribe, which never have ſo many.

The tranſmutations which caterpillars undergo are more numerous than thoſe of any inſects hitherto mentioned; and, in conſequence, they have been placed in the third order of changes by Swammerdam, who has thrown ſo much light on the ſubject of natural hiſtory. When excluded from the eggs, they become crawling caterpillars; then inſenſible aureliæ, as they are called, without life or motion; and laſtly, Butterflies variouſly painted, according to their different kinds.

It is well known by united experience, that all caterpillars are hatched from the eggs of Butterflies; and thoſe who obſerve them moſt minutely, will find the fly very careful in depoſiting it's eggs in places where they are likely to be hatched with the greateſt ſafety and ſucceſs. During the ſeverity of winter, therefore, the greateſt number of caterpillars continue in an egg ſtate, in that lifeleſs ſituation defying all the rigours and humidity of the climate; and, though often expoſed to all it's changes, they ſtill preſerve the latent principles of life, which are more fully exerted at the approach of ſpring. The ſame power that puſhes forth

forth the budding leaf and the opening flower, impels the inſect into animation; and Nature ſeems at once to furniſh the gueſt and the feaſt; for when the inſect has acquired ſufficient ſtrength to break it's ſhell, it always finds it's favourite aliment provided for it in abundance. All caterpillars, however, are not protruded from their eggs in the ſpring; many of them have ſubſiſted during the winter in their aurelia ſtate, when they are apparently deprived of life and motion. Some are incloſed in a kind of ſhells, which they have ſpun for themſelves at the end of autumn; others are concealed under the bark of trees; ſome in the chinks of old walls; and many are buried in the ground. But ſome caterpillars do not make any change whatever at the approach of winter, but continue to live in their reptile ſtate throughout all the inclemencies of that ſeaſon. They generally make choice of ſome retreat, where they can remain undiſturbed for months together; and, in fact, they then ſeem as motionleſs and inſenſible as if they were really dead. Their conſtitutions are ſuch, that food would at theſe periods be uſeleſs; and the cold prevents their making thoſe diſſipations which require reſtoration. In general, caterpillars of this kind are found in great numbers together, incloſed in one common web, which covers them all, and ſcreens them from the injuries of the air. And, laſtly, there are ſome of the caterpillar-kind, the Butterflies of which live during the winter; and, after having fluttered about a conſiderable part of the latter end of autumn, ſeek out a winter retreat, in order to anſwer the ends of propagation at the approach of ſpring. Theſe are often found lifeleſs and motionleſs in the hollows of trees, or the clefts of timber; but, on being brought near a fire, they recover life and activity, and ſeem to anticipate the deſires of the ſpring. In general, however, whether the animals have ſubſiſted in an egg ſtate during the winter, as Butterflies bred from aurelias in the beginning of ſpring, or as Butterflies which have ſubſiſted during the winter, and laid eggs as ſoon as the leaves of plants were ſhot forward; the whole ſwarm of caterpillars are in motion to ſhare the banquet that nature has provided. There is ſcarcely a plant which has not it's own peculiar inſects; and ſome are known to ſupport ſeveral of different kinds. Many of theſe are hatched from eggs, at the foot of the tree, and climb up to it's leaves for ſubſiſtence; the eggs of others have been glued by the parent Butterfly to the leaves; and they are no ſooner excluded from the ſhell, than they find themſelves in the midſt of plenty.

When the caterpillar firſt burſts from the egg, it is ſmall and feeble, it's appetites are in proportion to it's ſize, and it ſeems to make no great conſumption: but, as it increaſes in magnitude, it improves in it's appetites; ſo that, in it's adult or caterpillar ſtate, it is the moſt ravenous of all animals whatſoever. A ſingle caterpillar will conſume double it's own weight of leaves in a day, and ſeem in no reſpect diſordered by the meal. Theſe voracious habits, with it's ſlow crawling motion, and, ſtill more, a ſtinging like that of nettles, which follows on handling the greateſt number of them, render theſe inſects, to moſt people, not very agreeable objects of curioſity. However, many philoſophers have ſpent years in their contemplation; and have not only attended to their habits and labours, but minutely examined their ſtructure and internal conformation.

The body of the caterpillar, when anatomically conſidered, is found to be compoſed of rings, whoſe circumference is nearly circular, or oval. Theſe annulations are generally twelve in number, and all membranaceous; and by theſe caterpillars may be diſtinguiſhed from many other inſects which nearly reſemble them in ſhape. The heads of caterpillars are connected to the firſt rings by their necks; and are generally ſo ſhort and contracted, that they are ſcarcely perceptible. All the covering of the head of one of theſe animals ſeems to conſiſt of a ſhell; and they have neither upper nor under jaws, for they are both placed rather vertically; and each jaw is armed with a large thick tooth, which is, ſingly, equal to numbers. With theſe teeth the caterpillars devour their food in amazing quantities, and ſome of the kinds defend themſelves againſt their enemies. Though their mouths are ſhut, their teeth always remain uncovered; and while the inſects are in health, they ſeldom lie idle. Whatever leaves the caterpillars devour, their teeth ſerve to chop them into ſmall pieces, and render their parts fit for ſwallowing. Many kinds, while they are young, eat only the ſucculent part of the leaf, and leave all the fibres untouched; others, however, attack the whole leaf, and eat it quite away: and it is amuſing enough to obſerve the avidity with which theſe animals feed; ſome prolonging their feaſt throughout the whole day, others having their ſtated hours of repaſt, ſome chuſing the night, and others the day. When the caterpillar attacks a leaf, it places it's body in ſuch a ſituation, that the edge of the leaf ſhall fall between it's feet, which keep it ſteady; while the teeth are employed in cutting the leaf, ſomewhat after the manner of pruning-ſheers; and every morſel is ſwallowed the inſtant it is cut. Some caterpillars feed on leaves ſo very narrow, that they are capable of managing the whole breadth at once; in which caſe they devour it from the point downwards.

As the ſpecies of caterpillars are various, ſo they alſo differ in the number of their feet, ſome having eight, and others ſixteen. The ſix foremoſt are covered with a ſort of ſhining griſtle, and are therefore called the ſhelly legs. The hind feet, of whatever number they conſiſt, are ſoft and flexible, and are thence called membranaceous. Caterpillars alſo, with reſpect to their external figures, are either ſmooth or hairy. The ſkin of the firſt kind is either ſoft to the touch, or hard like ſhagreen; while that of the latter is hairy, and ſomewhat prickly, and in general affects the fingers with a ſenſation like that occaſioned by nettles; and ſome of them cauſe this ſtinging pain if but approached too near.

Caterpillars, in general, have ſix ſmall black ſpots, placed on the circumference of the fore ring, and a little to the ſide of the head. Three of theſe ſpots, which are larger than the reſt, are convex and tranſparent; and theſe Reaumur conſiders as the eyes of the caterpillars. However, moſt of theſe animals have very little occaſion for ſight, and ſeem only to be directed by their feelings. But the ſtigmata, as they are called, or thoſe holes on the ſides of the animal's body through which it is ſuppoſed to breathe, principally claim our attention. All along the body of the inſect theſe apertures are eaſily perceptible: they are eighteen in number, nine on a ſide; and are placed rather nearer the belly than the back, affording a hole for every ring of which the animal's body is compoſed,

poſed, except the ſecond, the third, and the laſt. Theſe oval openings may be conſidered as ſo many mouths, through which the inſect performs the office of reſpiration; and, indeed, it requires no great ſhare of anatomical dexterity to diſcover eighteen pair of lungs in the larger kinds of caterpillars, which appear, at firſt view, to be hollow, cartilaginous tubes, and of the colour of mother-of-pearl. Theſe tubes are often ſeen to unite with each other; ſome are perceived to open into the inteſtines; while others lead to different parts of the ſurface of the body. That theſe veſſels ſerve to convey the air, appears evident from the famous experiment of Malpighi; who, having ſtopped up the mouths of the ſtigmata with oil, quickly ſuffocated the animal. In order to aſcertain his theory, he rubbed oil on other parts of the body of the inſect, leaving the ſtigmata free; but this operation ſeemed to have no effect on the animal's health, as it continued to move and eat as uſual: he then rubbed oil on the ſtigmata of one ſide only; when the animal underwent a partial convulſion, but recovered ſoon after. However, it ſhould be remarked, that the air is not ſo neceſſary to theſe as to the nobler ranks of animals, ſince caterpillars will exiſt in an exhauſted receiver for ſeveral days together; and though they may appear to lie dead at the bottom, when taken out, they recover, and reſume their former vivacity.

If the caterpillar be diſſected longitudinally along the back, it's inteſtines will be perceived to run in a ſtraight line from the mouth to the anus. Theſe guts reſemble a number of ſmall bags opening into each other, and ſtrengthened on both ſides by a fleſhy cord by which they are united. On many occaſions the inſects are obſerved to caſt forth the internal coats of their inteſtines with their food, during the changes they ſo frequently experience. But the inteſtines occupy but a ſmall part of the animal's body, if compared with the fat or unctuous ſubſtance in which they are involved. This ſubſtance changes it's colour when the inſect's metamorphoſis begins to approach; and, from white, it is uſually ſeen to turn yellow. If to theſe parts we add the inſect's implements for ſpinning, we ſhall have a rude ſketch of this animal's conformation; but the life of a caterpillar ſeems only one continued ſcene of ſucceſſive changes; and it appears to throw off one ſkin merely to aſſume another, which alſo is diveſted in it's turn; and ſo on for eight or ten times ſucceſſively.

We muſt not, however, confound this changing of the ſkin with the great metamorphoſis which the inſect is afterwards doomed to undergo. The throwing off one ſkin, and aſſuming another, ſeems, comparatively ſpeaking, but a ſlight alteration, being only the work of a day; but the other is the great adventure of it's life. Indeed, this faculty of changing the ſkin is not peculiar to caterpillars only, but is common to all the inſect tribes; and even to ſome animals which claim a higher rank in the ſcale of nature. With reſpect to caterpillars, many of them change their ſkins five or ſix times in a ſeaſon; and theſe exuviæ ſometimes appear ſo compleat, that many might miſtake the empty ſkin for the real inſect. Among the hairy caterpillars, for example, the caſt ſkin is covered with hairs; the feet, as well the griſtly as membranaceous, remain affixed to it; even thoſe parts which are only diſcoverable by the help of a microſcope, are viſible in it; and, in ſhort, all the parts of the head, the ſkull, and the teeth.

In proportion as the time approaches when the caterpillar is to diveſt itſelf of it's old ſkin, it's colours become more faint, and the ſkin, which ſeems to wither, and grow arid in ſome meaſure, reſembles a leaf deprived of moiſture.

The inſect now begins to feel itſelf under a neceſſity of changing, but this is not effected without violent labour, and perhaps pain. A day or two before the critical hour approaches, it ceaſes to eat, loſes it's uſual activity, and ſeems to grow totally torpid. It looks about for ſome place where it may remain in ſecurity; and, no longer timorous, appears regardleſs of the touch. It is obſerved, at intervals, to bend itſelf, and elevate it's back; then to ſtretch to it's full extent; ſometimes to lift up it's head, and then to ſuffer it to drop; ſometimes to wave from ſide to ſide, and then to remain in quiet. At length, ſome of the rings of it's body, particularly the firſt and the ſecond, are ſeen to ſwell conſiderably; the old ſkin diſtends and burſts; till, by repeated ſwellings and contractions in every ring, the animal diſengages itſelf, and creeps from it's former covering. How laborious ſoever this operation may be, it is performed in the ſpace of a minute; and the animal, having thrown off it's old ſkin, ſeems to enjoy new vigour, as well as additional colour and beauty. Sometimes it aſſumes a new appearance, and colours very different from the old. Thoſe inſects which are hairy ſtill preſerve their coverings, though their ancient ſkins do not appear to have loſt a ſingle hair; every one of them appearing to have been drawn, like a ſword from the ſcabbard. However, the fact is, that a new crop of hair grows between the old ſkin and the new, and probably helps to throw off the external covering.

In this manner the caterpillar having continued feeding for ſeveral days, begins at laſt to prepare for it's change into an aurelia. It is moſt probable that, from the beginning, all the parts of the Butterfly lay hid in this inſect in it's reptile ſtate; but that it required time to bring them to perfection, as well as a large quantity of food to enable it to undergo all it's transformations. However, when the caterpillar has fed ſufficiently, and the parts of the Butterfly are formed beneath the ſkin, it is then the ſeaſon for it to make it's firſt and principal change into an aurelia, or chryſalis, as ſome call it; during which, as has been previouſly remarked, it ſeems to remain for ſeveral days, or even months, without either life or motion.

Preparatory to this important metamorphoſis, the caterpillar moſt uſually quits the plant, or tree, on which it is fed; or at leaſt attaches itſelf to the ſtalk or ſtem, in preference to the leaves. It renounces it's food, and prepares, by faſting, to undergo it's transformation. During this period, all the food it has ſwallowed becomes entirely digeſted; and it often voids even the internal membrane which lined it's inteſtines. Some of the tribe, at this period, entirely change their colour; and the vivacity of the tints in all of them ſeems conſiderably faded. Thoſe which are capable of ſpinning themſelves webs, ſet about theſe operations: and ſuch as have already ſpun them, await their change in the beſt ſtate they can. The webs, or cones, with which ſome of the inſects cover themſelves, hide the aurelias contained within them; but, in others, which are more tranſparent, the caterpillar, when it has finiſhed it's ſpinning, ſtrikes into the claws of the two feet under the tail, and afterwards forces in the tail itſelf, by contracting

tracting thoſe claws, and ſtriking the feet violently againſt each other. If, however, the inſects be taken from their webs at this time, they appear in a ſtate of great languor; and, being incapable of advancing or retreating, remain wherever they are placed. In this condition they continue one or two days, preparing to change into aurelias, ſomewhat after the manner they adopted in changing their ſkins. They then appear with their bodies bent like bows, which they now and then ſeem to ſtraighten; their legs appear entirely uſeleſs; and, if they attempt to change their places, theſe alterations are effected by evident contortions of their bodies. In proportion as their mutations into aurelias draw near, their bodies become more and more incurvated; while their extenſions and convulſive contractions become more frequent. The extremities of their bodies are firſt diſengaged from their caterpillar ſkins; thoſe parts of their ſkins remaining empty, while their bodies are drawn up in a contracted form towards their heads. In the ſame manner they diſengage themſelves from the two ſucceeding rings; ſo that the animals are then entirely lodged in the fore parts of their caterpillar coverings; the half which is abandoned remaining flaccid and empty, while the fore parts are ſwelled and diſtended. The animals having thus quitted the hinder parts of their ſkins, in order to drive themſelves up into their fore parts, ſtill continue to heave and work as before; till their ſkulls are ſoon ſeen to burſt into three pieces, and longitudinal apertures are made in the three firſt rings of their bodies, with reiterated efforts. Thus at laſt they totally emancipate themſelves from their caterpillar ſkins, and for ever bid adieu to their reptile form.

Being ſtripped of it's laſt exuviæ, the caterpillar becomes an aurelia; in which all the parts of the future Butterfly are diſtinguiſhable, but in ſo ſoft and tender a ſtate, that the ſmalleſt touch is capable of diſcompoſing them. The animal is now become helpleſs and motionleſs; but only waits for the aſſiſtance of the air, to dry up the moiſture on it's ſurface, and to ſupply it with a cruſt capable of reſiſting external injuries. Immediately after being ſtripped of it's caterpillar ſkin, it aſſumes a green colour, eſpecially in thoſe parts which are diſtended by an extraordinary afflux of animal moiſture: but, in ten or twelve hours after being thus expoſed, it's parts harden; the air forms it's external covering into a firm cruſt; and, in about twenty-four hours, the aurelia may be handled without endangering the little animal left in this defenceleſs ſituation.

Such is the hiſtory of that ſmall pod, or cone, which is ſo commonly found near every pathway, adhering to nettles, and other plants, and frequently ſhining like poliſhed gold. From the beautiful and reſplendent colour with which it is thus ſometimes adorned, it has obtained the name of the chryſalis, which implies a creature made of gold.

The above are the efforts made uſe of by theſe little animals in preparing for a ſtate of perfection. But their care in providing themſelves ſecure retreats during this ſeaſon of extreme imbecillity is ſtill greater; and it appears as if they were then erecting monuments in which to reſt perfectly ſecure till Nature called them into a new and more improved exiſtence: for which purpoſe, ſome of them ſpin cones, or webs, in which they lie ſecure till they have arrived at maturity; others, who cannot ſpin ſuch copious coverings, ſuſpend themſelves by their tails in retreats where they are not liable to annoyance; ſome mix ſand with their gummy and moiſt webs, and then form themſelves a ſecure incruſtation; while others, before their change, bury themſelves in the ground, and thus avoid the numerous dangers attendant on a more expoſed ſituation. From their conduct, it might be ſuppoſed that they were conſcious of the preciſe time of their continuance in an aurelia ſtate; ſince their little ſepulchres, with reſpect to their ſolidity, are proportioned to ſuch a duration. Thoſe which are to continue in that ſtage of exiſtence but a few days, make choice of ſome tender leaf, which they render ſtill more pliant by diffuſing a kind of glue over it: the leaf thus gradually curls up; and, withering as it unfolds, the inſect wraps itſelf within it, till the genial warmth of the ſun enables it to ſtruggle for new life, and burſt from it's confinement. Others, whoſe time of tranſformation is alſo near at hand, faſten their tails either to ſome branch, or to the firſt worm-hole they meet in a beam, and await their change in that defenceleſs ſituation. Such caterpillars, on the other hand, as are ſeen to lie ſeveral months in their aurelia ſtate, act with much greater circumſpection: moſt of them mix their webs with ſand, thereby rendering their coverings very ſtrong; while others build in wood, which ſupplies, as it were, the place of coffins. Thoſe which have made the leaves of willows their favourite food, break the tender twigs into ſmall pieces, and then pound them to a ſort of powder; and, by means of their glutinous ſilk, form a kind of paſte, in which they enwrap themſelves.

Various are the forms which theſe animals aſſume in this ſtate of imbecillity; and it often happens that the moſt deformed Butterflies iſſue from the moſt beautiful aurelias. In general, however, the aurelia aſſumes the rude outlines of the parts of the animal contained within it; but, as to the various colours which it is ſeen to aſſume, they are chiefly the effects of accident; for the ſame ſpecies of inſect does not at all times aſſume the ſame hue when it becomes an aurelia. In ſome, the beautiful gold colour is found at one time; while, at another, it is totally wanting. This brilliant hue, which is not inferior to the moſt ſuperb gilding, is formed in the ſame manner in which we ſee leather obtain a gold colour, though none of that metal ever entered into the tincture. It is formed only by a beautiful brown varniſh laid on a white ground; and the white, thus gleaming through the tranſparency of the brown, imparts a charming golden yellow. Theſe two colours are found, one over the other, in the aurelia of the little animal we are now deſcribing; and the whole appears as if gilded, without any real compoſition.

Thus formed, the aurelia is in time expanded into a Butterfly, and ſomewhat reſembles an animal in the egg, waiting for external warmth to hatch it into life. As the quantity of humidity incloſed within the covering of the aurelia continues to keep it's body in the moſt tender ſtate, it is requiſite that this humidity ſhould be dried up before the little Butterfly can burſt from it's priſon. Many experiments have been practiſed, in order to prove that nature may in this reſpect be aſſiſted by art; and that the life of the inſect may be retarded or quickened without being expoſed to any real injury; for this purpoſe, it is only neceſſary to continue the inſect in it's aurelia ſtate, by preventing the evaporation of it's humidity, which will conſequently add ſome days, or even weeks, to it's life;

on the contrary, by evaporating it's moiſture, in a warm ſituation, the animal aſſumes it's winged ſtate before it's uſual time, and goes through the offices aſſigned to it's exiſtence. To evince the truth of this, Mr. Reaumur incloſed an aurelia in a glaſs tube; and found the evaporated water, which exhaled from the body of the inſect, collected in drops at the bottom of the tube: he then covered the aurelia with varniſh; and, having thereby rendered the evaporation more difficult and ſlow, the Butterfly was two months longer than it's natural term in coming out of it's caſe. He found, on the other hand, that by laying the animal in a warm room, he haſtened the diſcloſure of the Butterfly; and that by keeping it in an ice-houſe, in the ſame manner, he retarded it. Warmth, in this caſe, acted in a double capacity; invigorating the animal, as well as evaporating the moiſture.

When, either by warmth or increaſing vigour, the parts have acquired their neceſſary force and ſolidity, the Butterfly ſeeks to diſembarraſs itſelf of thoſe bands which kept it ſo long in confinement; ſome, however, continue under the aurelia form only ten days, ſome twenty, ſome ſeveral months, and others for a year together. But, in general, the Butterfly makes only a ſhort continuance under it's aurelia form; and, in all, the perfect inſect ſooner or later burſts not only the natural priſon which is formed by the ſkin of the aurelia, but alſo that artificial one in which it has incloſed itſelf. The efforts which the Butterfly makes to liberate itſelf from it's aurelia ſtate, are by no means ſo violent as thoſe which it experienced in changing from the caterpillar into the aurelia. The quantity of moiſture which ſurrounds the Butterfly is by no means ſo copious as that which attended it's former change; and the ſhell of the aurelia is ſo dry, that it may be cracked between the fingers.

When the animal is ſhut up within a cone, the Butterfly always gets rid of the natural internal ſkin of the aurelia before it eats it's way through the external covering which it's own induſtry has formed round it. In order to obſerve the manner by which it diveſts itſelf of the aurelia covering, it is neceſſary to open the cone, and then the efforts of the inſect to emancipate itſelf from it's natural ſhell may be plainly perceived. When this operation commences, there ſeems to be a violent agitation in the humours contained within the body of the little animal; it's fluids ſeem impelled by a haſty fermentation through all the veſſels; while it labours violently with it's legs, and makes ſeveral other violent ſtruggles to get free. As all theſe motions concur with the growth of the inſect's wings and body, it is impoſſible that the brittle ſkin which covers it ſhould long reſiſt; and it at length gives way, by burſting in four diſtinct and regular pieces. The ſkin of the head and legs firſt ſeparates; then the dorſal ſkin flies open, and dividing into two regular portions, diſengages the back and the wings; and, at length, another rupture ſucceeds in that portion which covered the rings of the aurelia's back. After this the Butterfly, ſeemingly fatigued with it's exertions, remains very quiet for ſome time, with it's wings pointed downwards, and it's legs fixed in the ſkin which it has juſt thrown off. At firſt ſight, the animal, juſt ſet free, and permitted the future uſe of it's wings, ſeems entirely deſtitute of any; and they lie ſo cloſe, and occupy ſo little room, as to be entirely imperceptible: however, they ſoon after expand ſo rapidly, that the eye can ſcarcely attend to their unfolding. From reaching hardly half the length of the body, they acquire, in a moſt wonderful manner, their full extent and magnitude, ſo as to be each five times as large as before. Nor are the wings alone thus increaſed; all their ſpots and paintings, before ſo minute as to be hardly perceptible, are now proportionably extended; ſo that what a few minutes before ſeemed only a number of confuſed, unmeaning points, now become diſtinct and beautiful ornaments. The wing, the inſtant it is freed from it's late confinement, is conſiderably thicker than afterwards; ſo that it ſpreads in all it's dimenſions, and grows thinner as it expands in breadth. If one of the wings be plucked from the animal juſt ſet free, it may be ſpread by the fingers, and it will ſoon become as broad as that which is left behind. As the wings extend themſelves ſo ſuddenly, they have not had proper time to dry; and accordingly appear like pieces of wet paper, ſoft, and wrinkled. In about half an hour, they become perfectly dry; their wrinkles entirely diſappear; and the little animal aſſumes all it's ſplendor. The transformation being thus perfectly finiſhed, the Butterfly diſcharges three or four drops of blood-coloured fluid, which are the laſt remains of it's ſuperfluous moiſture. Thoſe aurelias which are incloſed within cones, find their exit more difficult, as they have ſtill another priſon to break through: this, however, they accompliſh in a ſhort time; for the Butterfly, diveſted of it's aurelia ſkin, butts with it's head violently againſt the walls of it's artificial priſon; and probably with it's eyes, which are rough like a file, it rubs the internal ſurface away, till at laſt it is ſeen burſting it's way into open light; and, in leſs than a quarter of an hour, the animal arrives at full perfection. Thus, to uſe the words of Swammerdam, we ſee a little inſignificant creature diſtinguiſhed in it's laſt birth with qualifications and ornaments which man, during his ſtay on earth, can never even hope to acquire. To enjoy life, the Butterfly needs no other food than the dews of heaven, and the honied juices which are diſtilled from every flower. The pageantry of princes cannot equal the ornaments with which it is inveſted, nor the rich colouring which embelliſhes it's wings. The ſkies are it's proper habitation, and the air it's element; while man comes into the world naked, and often roves about without habitation, and without ſhelter; expoſed, on the one hand, to the heat of the ſun; and, on the other, to the damps and exhalations of the earth; both alike inimical to his happineſs and exiſtence: a ſtriking proof that, while this little animal is raiſed to it's greateſt exaltation, man, in this world, is only a candidate for perfection.

The number of theſe beautiful inſects is amazingly great; and though Linnæus has enumerated above ſeven hundred and ſixty different ſpecies, the catalogue is ſtill very incompleat. Every collector of Butterflies can exhibit undeſcribed ſpecies; and he who is fond of minute diſcovery, can produce animals obſervable only by himſelf. In general, however, thoſe of the warmer climates are larger and more beautiful than ſuch as are found in Europe; and we can eaſily diſpenſe with the beauty of the Butterfly, ſince we are thus freed from the ravages of the caterpillar.

The wings of Butterflies, as already obſerved, fully diſtinguiſh them from flies of every other denomination. They are four in number; and,

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ſhould two of them be cut off, the animal would notwithſtanding be capable of flying. They are, in their own ſubſtance, tranſparent; and owe their opacity to the beautiful duſt with which they are ſprinkled; and which has been aſſimilated by ſome naturaliſts to the feathers of birds; and, by others, to ſcales of fiſhes; juſt as their imaginations were diſpoſed to catch the reſemblance. In fact, if we view the wing of a Butterfly with the aſſiſtance of a good microſcope, we ſhall find it to be ſtudded over with a variety of little grains of different dimenſions and forms, generally ſupported on a ſteffile, regularly laid on the whole ſurface. Nothing can exceed the beautiful and regular arrangement of theſe little ſubſtances, which thus ſeem to adorn the Butterfly's wing, like the tiles on a houſe, thoſe of one row being a little covered by the ſubſequent: they are alſo multiform; for on one part of the wing may be ſeen a ſucceſſion of oval ſtuds; on another, a cluſter of ſtuds, each in the form of a heart; in one place they reſemble an open hand; and, in another, they are long, or triangular; while all are interſperſed with taller ſtuds, which grow between the reſt, ſomewhat after the manner of muſhrooms on a ſtalk. The wing itſelf is compoſed of ſeveral thick nerves, which render the conſtruction very ſtrong, though light; and, though covered over with thouſands of theſe ſcales, or ſtuds, it's weight is very little increaſed by the number. The animal is with eaſe enabled to ſupport itſelf a long time in the air, though it's manner of flying is not very graceful. When the Butterfly intends a diſtant flight, it aſcends and deſcends alternately, moving ſometimes to the right, and ſometimes to the left, without any apparent motive. On a cloſer examination, however, it will be found to fly in this irregular manner in purſuit of it's mate, whom it ſeems capable of diſcovering at a conſiderable diſtance.

The body of the Butterfly may be divided into three parts; the head, the corſelet, and the body. The body, which is the hinder part of the inſect, is compoſed of rings, generally concealed under long hair. The corſelet is more ſolid than the reſt of the body, becauſe it gives riſe to the fore-wings and the legs. The legs are ſix in number, though only four are made uſe of by the animal; the two fore legs being often ſo much concealed under the long hair of the body, that it is difficult to diſcover them. If we examine theſe parts internally, we ſhall obſerve the ſame ſet of veſſels in the Butterfly which compoſed the caterpillar; but with this difference, that as the blood or humours in the caterpillar circulate from the tail to the head; in the Butterfly, they are found to take a courſe directly contrary, and to circulate from the head to the tail: ſo that the caterpillar may be conſidered as the embryo animal, in which the circulation is carried on differently from that of animals when excluded.

The eyes of all Butterflies have not the ſame external appearance; for, in ſome, they are large; in others, ſmall; in ſome, they are the larger portion of a ſphere; in others, they are but a ſmall part of it, and juſt appearing from the head. In all of them, however, the exterior coat has a luſtre, in which may be diſcovered the various colours of a priſm. When examined minutely, it will appear like a multiplying-glaſs, having a great number of ſides, or facets, in the manner of a brilliant-cut diamond. In this particular, the eyes of Butterflies, and of moſt other inſects, entirely correſpond: and Leewenhoek aſſerts, that there are above ſix thouſand facets on the cornea of a flea: hence theſe animals ſee not only with great perſpicuity, but view every object multiplied in a very ſurprizing manner. Puget adapted the cornea of a fly in ſuch a poſition, as to ſee objects through it by means of a microſcope; and nothing could exceed the ſtrangeneſs of it's repreſentations. A ſoldier who was viewed through it, appeared like an army of pigmies; for while it multiplied, it alſo diminiſhed the object. The arch of a bridge exhibited a ſpectacle more magnificent than human ſkill could perform; and the flame of a candle appeared like a ſplendid illumination, But it muſt be confeſſed, that ſtill it remains a doubt, whether the inſect ſees objects ſingly, as with one eye; or whether every facet is itſelf a compleat eye, exhibiting it's own object diſtinct from all the reſt.

Butterflies, as well as moſt other flying inſects, are furniſhed with two inſtruments, like horns, on their heads, which are called antennæ, or feelers. They differ from the horns of greater animals in being moveable at their baſes, and alſo in having a great number of joints, by which means the inſect is enabled to turn them in every direction. Thoſe of Butterflies are placed at the top of the head, pretty near the external edge of each eye. What the uſe of theſe inſtruments may be, which are thus formed with ſo much art, is as yet unknown to man; but of this we may be certain, that they anſwer ſome beneficial purpoſes: they may, perhaps, ſerve to guard the eye; they may be uſeful to clean it; or they may be the organs of ſome ſenſes of which we are entirely ignorant.

Few inſects of the Butterfly kind are deſtitute of trunks; and of their uſes naturaliſts are ſufficiently apprized. They are placed exactly between the eyes; and, when the animals are not employed in ſeeking their nouriſhment, they are rolled up in curls. A Butterfly, when feeding, flies round ſome flower; and, ſettling on it, uncurls it's trunk, and thruſts it out, either wholly or in part, and employs it in ſearching the flower to it's very bottom. This ſearch being reiterated ſeven or eight times, the animal then paſſes to another; and continues to hover over ſuch flowers as are moſt agreeable to it's taſte, like a bird over it's prey. This trunk is compoſed of two equal hollow tubes, nicely joined to each other, like the pipes of an organ.

Such is the general figure and conformation of theſe beautiful inſects, which cheer our walks, and add to the beauty of the moſt delightful ſeaſon. But it is not by day alone that they wantonly flutter from flower to flower; numbers of them chuſe the night for their excurſions, and expand their moſt beautiful colourings during thoſe hours when no human eye beholds them. This tribe of inſects therefore has been divided into diurnal and nocturnal flies, or into Butterflies and moths. They may be eaſily diſtinguiſhed from each other by their horns or feelers; thoſe of the Butterfly being clubbed, while thoſe of the moth taper to a point.

Theſe two claſſes equally employ their ſhort exiſtence in a variety of enjoyments. They employ a conſiderable part of their time in ſearching for their food, which is found on every flower; and in the purſuit of the females, whoſe approach they can often perceive at the diſtance of more than two miles. Their ſagacity in this reſpect is no leſs aſtoniſhing than true; but, by what ſenſe they are thus capable of diſtinguiſhing each other at ſuch diſtances, is not eaſy to conceive. It is impoſſible that it can be through the ſtrength of

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their ſight, ſince ſuch ſmall objects would be utterly imperceptible at half the diſtance; neither can it be by the ſenſe of ſmelling, ſince theſe animals are not furniſhed with any organs for that purpoſe. But whatever may be their power of perception, certain it is, that the male, after having fluttered about for ſome time, is ſeen to take wing, and proceed directly forward to the place where the female is perched on a flower.

Among the various tribes of inſects, it is the general rule that females are larger than the males; and it holds good in a peculiar manner with reſpect to Butterflies. The body of the male is ſmaller, and more ſlender; and that of the female more thick and oval. Previous to the junction of theſe animals, they are ſeen ſporting in the air, alternately purſuing and flying from each other, and preparing, by a kind of amorous dalliance, for the more important buſineſs of their lives: and if diſturbed in the act of coition, the female flies off with the male, who appears entirely paſſive on the occaſion.

The females of many ſpecies of Butterflies ſeem to have aſſumed their airy forms for no other purpoſe than that of fecundating their eggs, and laying them. They are neither ſeen fluttering about in queſt of food, nor of mates; and all that paſſes during their ſhort lives, is only a junction with the males for about half an hour; after which they depoſit their eggs, and die.

The eggs of female Butterflies are diſpoſed in their bodies like beds of chaplets; and, when excluded, they are generally oval, and of a whitiſh colour: ſome, however, are entirely round; and others flatted like turnips. The covering, or ſhell, of the egg, though ſolid, is thin and tranſparent; and, in proportion as the caterpillar expands within the egg, the colours change, and are differently diſtributed. The Butterfly ſeems perfectly inſtructed by Nature in it's choice of the plant or leaf on which to depoſit it's burden. Each egg contains but one caterpillar; and it is requiſite that the little animal, when excluded, ſhould be near it's proper food: accordingly the little winged creature, though it has itſelf been fed on dew, or the honey of flowers, makes choice of a very different ſpecies of proviſion for it's young, and depoſits it's eggs on the moſt unſavoury plants, ſuch as the ragweed, the cabbage, or the nettle. Thus every Butterfly ſelects not the plants moſt grateful to it in it's winged ſtate, but ſuch as it has been fed on in it's reptile form.

The eggs of Butterflies are always attached to the leaves of their favourite plants, by a kind of ſize or glue; where they continue unobſerved, unleſs carefully ſought after. They are ſometimes placed round the tender ſhoots of plants, in the ſhape of bracelets, conſiſting of more than two hundred in each, and generally ſurrounding the ſhoot like a ring. But ſome Butterflies ſecure their eggs from the injuries of the air by covering them with hair plucked from their own bodies; and by this precaution they are kept warm, as well as entirely concealed.

The females of moths lay their eggs ſoon after they are emancipated from their aurelia ſtate: but there are many Butterflies which flutter about the whole ſummer, and never think of laying till the cold warns them of their approaching end; and ſome even continue the whole winter in the hollows of trees, and neglect to provide for poſterity till the beginning of April, when they leave their retreats, depoſit their eggs, and die. Their eggs ſoon begin to feel the genial warmth of the ſun; the little animals burſt from their caterpillar ſtate, then become aurelias and Butterflies in their turn; and thus continue the round of nature.

Endued, as Butterflies are, with ſo many ſtages of exiſtence, and poſſeſſed of ſuch aſtoniſhing beauty in that ſtate which we may well pronounce their perfect one, it is by no means to be wondered that they ſhould have been noticed, in their ſeveral mutations, with the utmoſt preciſion, by thoſe who have had leiſure to cultivate ſo pleaſing an amuſement: and there are not wanting ſome ingenious naturaliſts, who have acquired no inconſiderable portion of fame from the accuracy of their obſervations on theſe inſects alone, though a compleat general hiſtory of Moths and Butterflies, Foreign as well as Engliſh, ſeems ſtill to be among the many deſiderata of Natural Hiſtory. Indeed, thoſe who have made the greateſt progreſs in other branches of the ſcience, have in general declined the inveſtigation of every kind of inſects: convinced that the infinitude of different tribes, and the extreme minuteneſs of many of them, would render the utmoſt efforts of human ſagacity unequal to the taſk of forming a compleat diſcrimination.

Butterflies have by ſome naturaliſts been divided into ſeven claſſes, after the following manner.

The firſt claſs conſiſts of thoſe which have clavated feelers, keep the planes of their wings perpendicular to that of poſition, and whoſe lower wings are applied cloſe to the under parts of their bodies; and theſe likewiſe ſtand and walk with each of their ſix legs. The white Butterfly, ſpotted with black, is an inſtance of this kind.

The ſecond ſpecies conſiſts of thoſe which have their wings perpendicular to the plane of poſition, and whoſe lower edges likewiſe only embrace the lower parts of their bodies; they ſettle on four legs, and generally keep the fore pair of legs folded up. Several kinds of the prickly caterpillars produce Butterflies of this claſs, and particularly the prickly caterpillar of the nettle.

The third claſs is compoſed of Butterflies which carry their wings erect, and have the ſame ſort of feelers as the former claſs; they only uſe four legs, the other pair being ſo ſmall as to be ſcarcely perceptible. A variety of ſpecies may be referred to this claſs; and particularly ſome which have their wings ſpotted with black and white in the ſhape of the ſquares of a cheſs-board.

The fourth claſs likewiſe contains Butterflies with clavated feelers, and ſix real legs. When at reſt, they hold their wings perpendicular to the plane of poſition, but have the edges of their lower wings turned up, ſo as to embrace and cover the upper parts of their bodies, while all the reſt are naked. Beſides this, each lower wing has a long appendage near the external end of the baſe, and a part whoſe point reaches much beyond the reſt of the body. This part ſeems to form a tail, and therefore ſome have called this inſect a tailed Butterfly. However, there are Butterflies which are deſtitute of theſe appendages; and yet have their lower wings ſo bent, that they embrace the lower parts of their bodies. Butterflies of this claſs generally appear towards the latter end of July.

The fifth claſs conſiſts of thoſe which have clavated feelers, and ſix true legs; but, when they are at reſt, generally keep their wings parallel to the plane of poſition, or at leaſt never elevate them ſufficiently for the two upper wings to embrace

each

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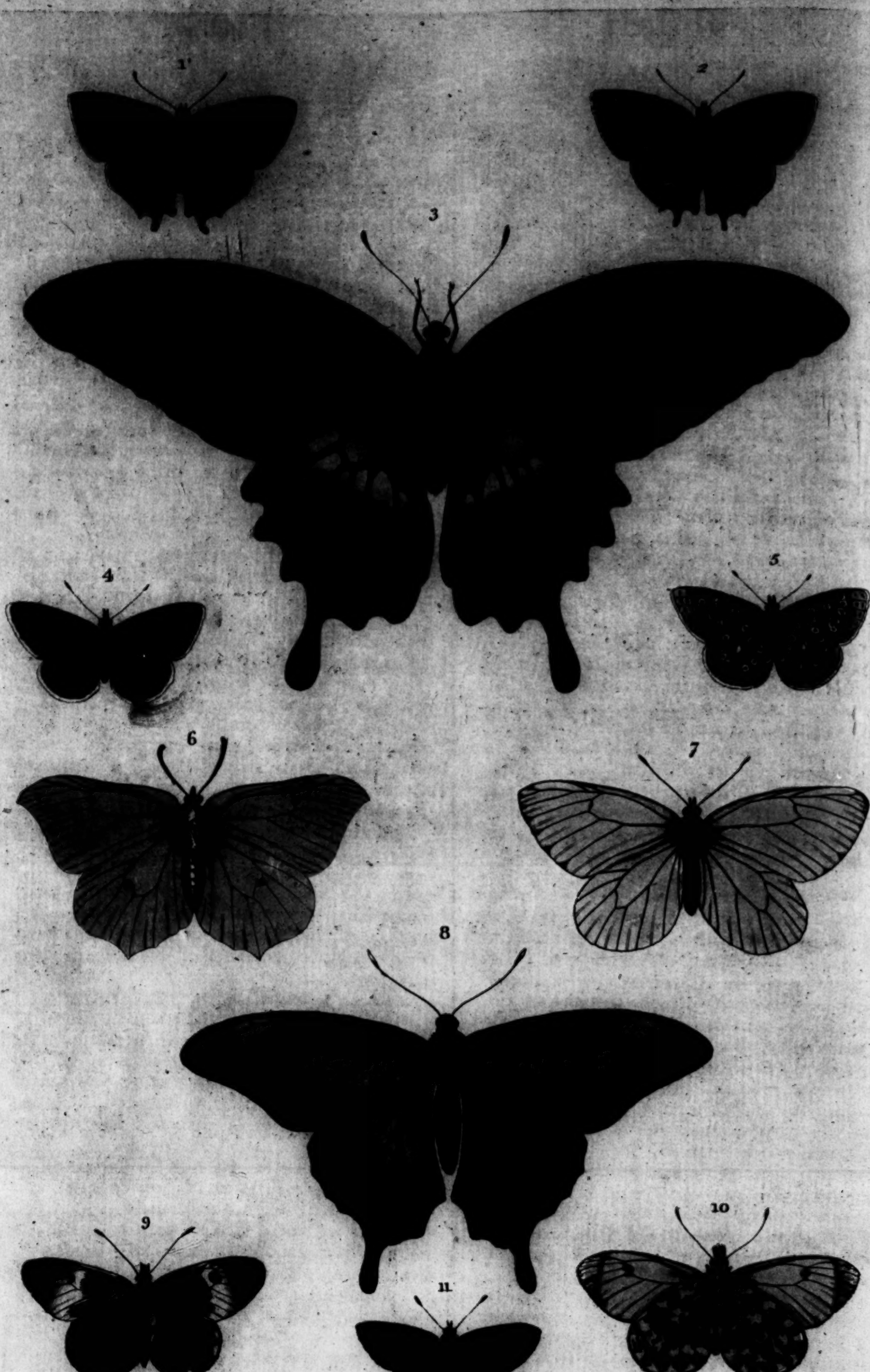

BUTTERFLIES. Plate I.

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each other above the body. A Butterfly of this claſs proceeds from a ſmooth caterpillar of marſh-mallows.

The ſixth claſs is characterized by having clavated feelers, increaſing in thickneſs from their roots to their points. They ſeem almoſt continually in motion, hovering over flowers, and thruſting in their trunks, in order to extract the juice. From the noiſe they make with their wings, ſome call them by the name of humming-bird moths; but Beaumont places them among the papillio, becauſe the wings of ſome ſpecies are not ſo entirely covered with farina as to be quite opaque, for they are partially tranſparent.

Lepidoptera of the ſeventh claſs have feelers incurvated in the form of rams-horns; of which kind is the Butterfly found very commonly in meadows, on the ſtocks of plants, and which flies very little in the day-time. Merian, from this circumſtance, contends, that it ought to be referred to the claſs of moths; but Ray and Reaumur place it among Butterflies. Ray likewiſe makes another claſs of theſe Butterflies, with feelers like conical threads.

Mr. Harris, ſecretary to the Aurelian Society, has given us the following ſynoptical ſyſtem of the Papillio, commonly called Butterflies.

Butterflies, ſays this ingenious gentleman, are diſtinguiſhed from other inſects by theſe generical characters: their antennæ, or horns, are clubbed at the extremities; their wings, when at reſt, are cloſed together erect over their backs; and they fly only in the day-time.

Linnæus has divided them into five phalanges, or genera; viz. Equites, Heliconii, Danai, Nymphales, and Plebeii.

In that genus which is called Equites, the under-wings have each an appendage, or tail; and, from this circumſtance, they are denominated ſwallow-tails.

In the Heliconii, the wings are long, narrow, and even at the edges; the ſuperior ones being large, and the inferior ſmall.

In the Danai, the wings are ſmooth and even at the edges, without denticulations or tails, exactly like thoſe of the common white Butterfly.

In the Nymphales, the wings are denticulated, and ocellated, having eye-like ſpots or rings.

The Plebeii comprehends the numerous tribes of minute Butterflies which ſeem to be a diſtinct generation or order from any of thoſe juſt enumerated.

In this country, we have only about fifty-three ſpecies: for a more particular account of which the curious reader is referred to Mr. Harris's Engliſh Lepidoptera, as it is not poſſible, in a work of this very general nature, to give more of theſe elegant inſects than a few of the moſt beautiful and curious ſpecimens in the different genera.

The reader is accordingly preſented with accurate deſcriptions, and delineations from nature, of thoſe which appeared moſt likely to be acceptable; and ſome of them are actual non-deſcripts, from different parts of the world.

Theſe are arranged on four plates, in the following manner.

PLATE THE FIRST.

Fig. 1. BROWN HAIR-STREAK; the BETULÆ, Plebeii, of Linnæus. The head, thorax, and abdomen, are of a dark brown-colour; and the wings are alſo of a lovely dark brown, the ſuperior ones having each a large orange-coloured ſpot near the tip, which almoſt covers the fan-membranes.

Fig. 2. *Under-ſide.* The under-ſide is of a brownish orange-colour. The ſuperior wings have each a triangular ſpot near the tip, reaching from the ſector-edge half way down the wing, where it terminates in a point, which is not only of a darker brown than the reſt, but edged round with a neat white line; there is alſo a ſmall black ſpot near the middle of each ſuperior wing. The inferior ones have each a broad bar extending quite acroſs; which is of a darker orange-brown than the reſt of the wing, and neatly edged or bordered with white.

The expanſion of the wings, from tip to tip, is one inch and three-quarters.

The caterpillar feeds on buckthorn: it changes into a chryſalis in July, and the fly comes forth in Auguſt; when it may be found playing on the tops of hedges, near maple-trees, round which it ſportively purſues others of it's own ſpecies.

Fig. 3. The DEIPHOBUS, Equites, of Linnæus. The antennæ, head, thorax, and abdomen, together with the ſuperior wings, are of a fine dark brown; each wing having, near the ſhoulder ligament, two triangular ſpots of deep ſcarlet, the largeſt near three-quarters of an inch long, and the other, beneath it, about the ſize of a canary-ſeed. The inferior wings are of an orange-brown, but very pale: in the centre, on each membrane, near the fan-edge, is a large black ſpot; and theſe, joining together, compoſe a broad irregular bar reaching to the abdominal part, where there are two ſeparate and diſtinct ſpots on each wing. The tails are black, and on the fan-edge of each there are ſix creſcent-ſhaped ſpots of orange-brown.

The expanſion of the wings is ſix inches and a half.

Edwards ſays that this Butterfly is a native of China, but it is alſo known to exiſt in many parts of the Eaſt Indies.

The inſect above deſcribed is a female: the male, which is ſmaller, is given by Edwards, who ſeems to produce it as a diſtinct ſpecies, though their markings are ſimilar, and both were brought from China.

Fig. 4. The BLUE-FLY; the ARGUS, Plebeii, of Linnæus. The antennæ are black, having white ſpecks down them; the head is covered with white hair; and the thorax and abdomen are cloathed with hair of a lightiſh blue colour. The wings, which are of a moſt ſplendid and beautiful blue, have the gloſs of fine ſattin; and they are each bordered or fringed with white.

Fig. 5. *Under-ſide.* The under-ſide is of a grey or cinder-colour, ſprinkled all over with ſmall eye-like rings of white, each having a black ſpot in the middle.

The expanſion of the wings is one inch and three-eighths.

The Blue-Fly is common in England. It appears the beginning of June; and is found playing among long graſs in meadows, where it conſtantly ſleeps at night.

Fig. 6. BROAD GREEN-BARRED SWALLOW-TAIL. The head, thorax, and abdomen, as well as the

wings, are of a fine deep black, having a broad bar of a light ſea-green colour, which takes it's riſe from a few ſpots of the ſame hue near the apex; and, croſſing the membranes to the ſlip-edge near the thorax, extends to the width of three-quarters of an inch, when it ſeems to renew it's courſe acroſs the under-wings to the abdominal groove, where it's width is exactly the ſame length as the abdomen. On the lower border of the under-wings, there are ſix ſpots of a light ſea-green colour, one on each membrane; the abdominal alone excepted, which has none.

The expanſion of the wings is exactly four inches.

This Butterfly, though ſuppoſed by ſome naturaliſts to be a non-deſcript, may be ſeen in Sir Hans Sloane's Hiſtory of Jamaica; and it is frequently met with in the Brazils.

Fig. 7. BLACK-VEINED WHITE; the CRATAGI, Heliconii, of Linnæus. The thorax and abdomen are black, and covered with a fine hair of a greyiſh colour, tinged with a greeniſh hue. All the wings are of a lovely white, with a ſlight tincture of pale ſea-green. The tendons of the wings are very conſpicuous, appearing as neat lines of black. The under-ſide has a ſimilar appearance, only the black tendons appear ſtronger, and the general colour of the wing partakes of a yellowiſh-green.

The expanſion of the wings is two inches and three-quarters.

The caterpillar feeds on the white-thorn, and aſſumes the chryſalis in May; and the fly, which appears in June, greatly delights in hovering over corn-fields.

Fig. 8. BRIMSTONE; the RHAMNI, Danai, of Linnæus. The antennæ are of a roſe-colour; and not unlike, either in form or colour, the tubes or buds of the woodbine or honey-ſuckle. The thorax and abdomen are black, covered with white hair of a brilliant ſilver gloſs, like the fineſt ſattin. The wings are formed in a manner peculiar to this genus; the ſhoulder-part of the ſector-edge projecting beyond the palpi, and the upper or ſuperior wings coming to a ſharp point at the tips or apices. The inferior wings have two ſharp points at the lower edge. The whole of the wings are of a moſt beautiful yellow, with a brimſtone caſt, but much deeper, having a ſmall ſpot of orange-red near the middle of each.

The expanſion of the wings is two inches and a half.

The caterpillar, which is green, feeds on buck-thorn, in May; and, changing into it's chryſalis ſtate about the end of that month, the fly comes forth at the end of June, and is ſeen in fields, meadows, lanes, commons, and woods.

Fig. 9. LADY OF THE WOODS; the CARDUAMINOS, Danai, of Linnæus. The head is yellow, covered with hairs of a pale green; the thorax and abdomen are black, having hair of a yellowiſh colour. The ſuperior wings are of a fine cream-colour; except one-half towards the tip or apex, which glows with an orange-red ſo extremely brilliant, as to render it quite inimitable by the fineſt colourers in the world. The tips are tinged with brown, and a ſmall black ſpot is ſeen in the middle of each wing, juſt within the verge of the orange-colour. The under-wings are of a fine cream-colour, and entirely plain.

TBUT

The expanſion of the wings is one inch and three-quarters.

The caterpillar feeds on wild cole, &c. and changes to a chryſalis in July; but the fly does not appear till the enſuing ſpring, about the beginning of May. It delights in meadows; round which, by the hedges, it will continue to fly more than twenty times ſucceſſively without once ſettling. Indeed, we never remember to have ſeen one of them at reſt.

Fig. 10. *Female.* The Female Lady of the Woods in ſome reſpects very much reſembles the male, but in others is materially different. She is ſomewhat larger, and the markings or characters are more groſs; but ſhe is deſtitute of that beautiful orange-colour on the upper-ſide of the ſuperior wings which ſo eminently diſtinguiſhes the male. The under-ſide is of a milky white; the ſector-edges and tips of the ſuperior wings, for near a quarter of an inch, are dappled with green; and, in the centre, on the table-bar, there is a black ſpot or mark like the point of a broad-arrow. The inferior wings are all over beautifully marbled or ſprinkled with green irregular markings, here and there a little tinged with yellow.

The expanſion of the wings is two inches.

Fig. 11. COPPER; the VIRGAUREÆ, Plebeii, of Linnæus. The eyes and head are of a dark-brown; the former being nearly encircled by a neat line of white. The ſuperior wings, which are of a bright red copper-colour, have ſeven or eight black ſpots, and are edged with a brown border. The under-wings are of the ſame dark brown, having each a broadiſh border at the bottom or fan-edge, with four ſpots of black.

The expanſion of the wings is one inch and an eighth. It flies in meadows, in June and Auguſt; and may be found ſitting on the graſs before ſun-riſe in company with the blue-fly.

PLATE THE SECOND.

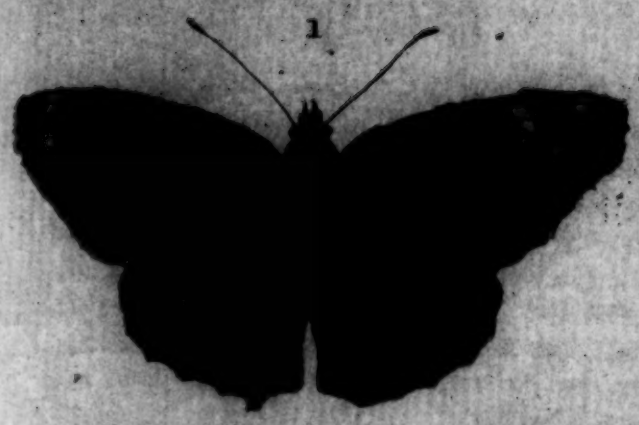
Fig. 1. PAINTED LADY; the CARDUI, Nymphales, of Linnæus. The head, thorax, and abdomen, are dark-brown, covered with hair which ſhines like bronze or gold. The wings in general are of a browniſh orange-colour, dappled with black ſpots or clouds of various ſhapes; eſpecially thoſe parts of the upper-wings next the apices, which are all black, except five white ſpots on each.

Fig. 2. *Under-ſide.* The palpi are white, the eyes are red, and the thorax is a light-brown. The upper or ſuperior wings are of a fine light orange-colour, but they become a deep crimſon near the body; and the parts towards the tips are of a pale brown, having five white ſpots. The remaining parts are dappled with black, and there is one large white ſpot nearly ſquare on the ſector-edge. The inferior wings are of a pale yellow-brown, dappled with dark brown ſpots of various forms, but nearly of a ſize. Near the lower border, there are five eye-like circular ſpots.

The expanſion of the wings is two inches and a half.

The caterpillar, which feeds on thiſtles and nettles, changes to the chryſalis in July, and the fly comes out in Auguſt. It is fond of ſettling on docks and thiſtles, near banks or dung-hills.

Fig. 3. GREAT TORTOISE-SHELL; or the POLY-CHLOROS,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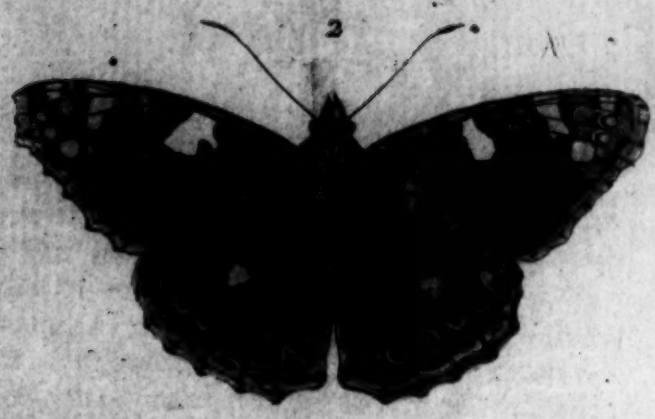
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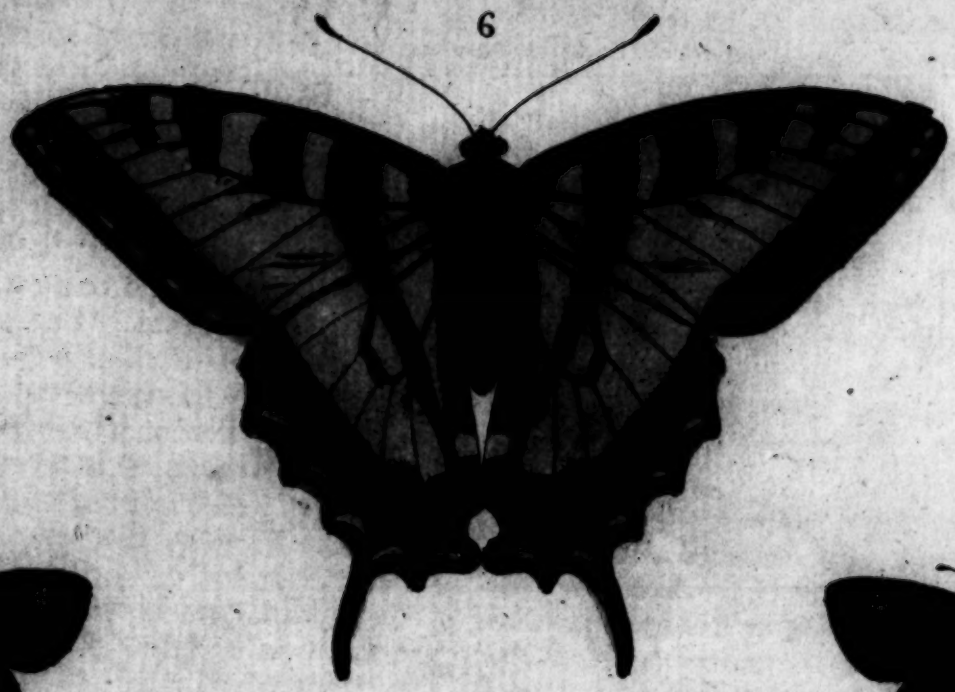
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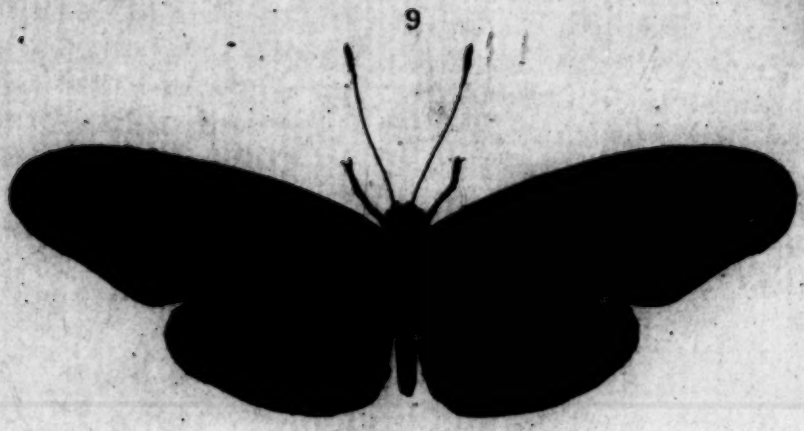
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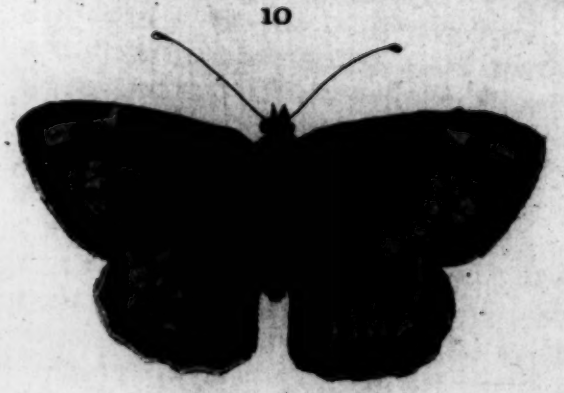
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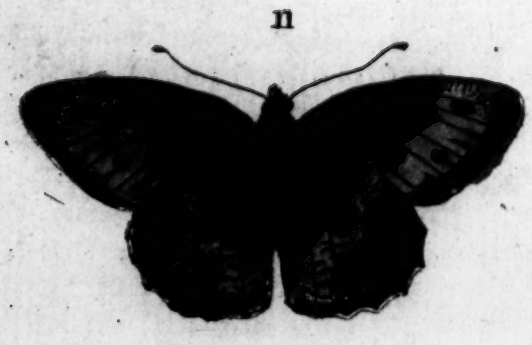
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BUTTERFLIES. Plate II.

Plate XXV.

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Moses Harris del et sc.

CHLOROS, Nymphales, of Linnæus. The head is a dark brown; the antennæ are long; and the thorax and abdomen are black, covered with brown gloſſy hair. The ſuperior wings are of a fine orange-brown, with ſeven large ſpots of black, two of which are much larger than the reſt, and join to the upper or ſector-edge of the wing, one near the middle of the edge being nearly ſquare. The outer or fan-edges are bordered with black, having ſeven ſpots of light brown, one on each membrane. The inferior wings are of the ſame orange-brown as the ſuperior ones; but they are black towards the body; and the lower or fan-edges are bordered with dark-brown, having a black triangular ſpot on each membrane, where there is a fine blue ſpot in the form of a creſcent. This fly, though not gaudy, is of a very grand appearance.

The expanſion of the wings is two inches and three-quarters.

The caterpillar, which feeds on elm-trees, changes to the chryſalis about the end of June, and the fly comes forth in July. It is found flying about in lanes, and is remarkably fond of ſettling on the bodies of trees.

Fig. 4. GATE-KEEPER; the MEGERA, Nymphales, of Linnæus. The head, thorax, and abdomen, are of a very dark olive-brown; the ſuperior wings are of a fine orange-brown; the outer, or fan-edges, have a fine broad border of dark olive-brown. Near the apex or tip of each wing, there is a large black ſpot about the ſize of a hempſeed, in which are two fine white ſpecks ſmaller than the head of a minikin pin. The inferior wings are of the ſame orange-brown as the ſuperior; but, being bordered round with dark olive-brown, the ground-colour of orange-brown appears like a ſpot in the middle. Near the abdominal corner there is a black ſpot, having a white ſpeck in the middle; indeed, in ſome ſpecies there are two, and in others none. That which we have deſcribed is a female: the male is leſs, of a deeper colour, and has a large brown cloud in the middle of the ſuperior wings.

Fig. 5. *Under-ſide.* The under-ſide is ſimilar to the upper; except in the inferior wings, which are of a light clay-colour clouded with brown. In theſe clouds there are five white ſpecks; two near the abdominal corner of each wing, and three near the upper edge.

The expanſion of the wings is one inch and three-quarters.

The caterpillar, which feeds on graſs, changes to the chryſalis in June, and the fly appears in July. It chiefly flies about banks and hedges in meadows.

Fig. 6. NEW-YORK SWALLOW-TAIL. The antennæ are long, the knobs at the extremity being remarkably large. The head, thorax, and abdomen, are black. None of this ſpecies have any palpi. The ſuperior wings are of a fine light yellow, a little on the orange tint. The outer or fan-edge has a border of black about a quarter of an inch broad; in which, near the edge, are eight ſpots of light yellow, one on each membrane. Adjoining to the upper or ſector-edge, there are four large black ſpots; and that which is next the thorax, croſſing the ſuperior wing, extends downward through the inferior, growing narrower, and indeed loſing itſelf in a miſty point, as it approaches the abdominal corners. The inferior wings are of the ſame colour as the ſuperior ones. On the bar-tendon in the middle of each wing there is a long angular black ſtroke. The outer or fan-edges have a border of black, almoſt three-quarters of an inch broad. Near the external edge of each wing, which is denticulated, there are four yellow creſcent-like ſpots; and near the lower or abdominal corner, there is an eye-like ſpot, the ſuppoſed centre of which is red ſurrounded with black; over which there is an arc-like mark of blue, concentric with the red ſpot. The tails at the lower parts of the wings are nearly three-quarters of an inch long.

The expanſion of the wings is four inches and a quarter.

The New-York Swallow-Tail is nearly ſimilar to that we have in England; and is found in ſeveral parts of the Weſt Indies, as well as North America.

Fig. 7. GRAYLINE; the SEMELE, Nymphales, of Linnæus. The head, thorax, and abdomen, together with the whole upper-ſide, are of a fine olive-brown; but, on the fan-membranes, towards the outer edge, there are ſeveral daſhes of a light or pale clay-colour; and in two of theſe on each wing is a round black ſpot, with a white ſpeck in the centre, appearing like eyes. The inferior wings have alſo theſe light markings, but they are there in the form of the blade of a trowel, and of an orange-colour. Near the abdominal corner there is another eye-like ſpot, but of an orange-colour, having a black ſpeck in the centre; and in the middle of this ſpeck there is a ſmall white one.

Fig. 8. *Under-ſide.* The head and thorax are brown. The ſuperior wings are of a bright, though pale, orange clay-colour; one-half is clouded with orange clay-colour, and has the two eye-like ſpots as in the upper-ſide. The inferior wings next the abdomen are half-way covered with a cloud of dirty brown, brindled with ſmall ſtrokes of black; the other half is of a pale aſh-colour, brindled all over with the ſame ſort of minute black ſtreaks.

The expanſion of the wings is two inches and a half.

The caterpillar, which feeds on graſs, changes to a chryſalis towards the end of June, and the fly comes forth the end of July. It delights in woods, and flies very low.

Fig. 9. AMERICAN ZEBRA; the CHARITHONIA, Heliconii, of Linnæus. The head and thorax are black, ſpotted with yellow. The abdomen is black on the upper-ſide, but yellow beneath. The ſuperior wings are of a warm browniſh-black, on each of which are three bold bands or bars of yellow: the firſt of theſe bars takes it's riſe from the ſhoulder, and keeping parallel with the lower or ſlip-edge, ends a little above the lower-corner; the ſecond begins about the middle of the upper or ſector-edge, and approaches the middle of the outer or fan-edge; and the third croſſes the wing near the tip or apex in a concentrical curve. The inferior wings are of the ſame browniſh black, having a broad yellow bar, which reaches quite acroſs from the outer corner of one wing to the other.

This

This ſtripe is quite cloſe to the lower edge of the upper wing all the way; and beneath it is a ſtripe or chain of yellow ſpots running parallel with the upper one, and at equal diſtances from each other, with ſuch regularity as to appear like a necklace. In this line there are ſixteen ſpots on each wing; and near the edge below there are eight more.

The expanſion of the wings is three inches and a half.

Fig. 10. SMALL GATE-KEEPER; the PAMPHILUS, Plebeii, of Linnæus. The head, thorax, and abdomen, are black. The wings are all of a light orange clay-colour, bordered with a miſty brown; the ſuperior ones have a ſmall black ſpeck near the tips; and each wing is fringed with white.

Fig. 11. *Under-ſide.* The ſuperior wings are finer and deeper in colour than on the upper-ſide; the eye near the tip is remarkably lively, having a ſmall white ſpeck in the centre of a black ſpot, which is again encircled with a ring of yellow. The inferior wings are of a greyiſh clay-colour, except the upper-part next the thorax, which appears to be one entire cloud of duſky brown.

The expanſion of the wings is one inch and a quarter.

The caterpillar feeds on graſs; and the fly, which appears at the end of April, or in the month of June, generally plays among the graſs, and never flies high.

PLATE THE THIRD.

Fig. 1. GREEN-VEINED WHITE; the NAPI, Danai, of Linnæus. The antennæ are ſpeckled from the head to the knobs. The head and thorax appear black, covered with a greyiſh hair; but, near the neck, they are yellowiſh. The abdomen is black, and powdered with white ſpecks. The wings are of a lovely ſoft greeniſh white; and the tendons are very viſible, appearing like ſo many hair-ſtrokes. The tips of the ſuperior wing are black for about a quarter of an inch, between which and the lower or ſlip-edge there are two black ſpots. The inferior wings have only one ſpot, which is on the upper-edge, a little above the outer corner, and generally concealed by the lower edge of the ſuperior wing.

Fig. 2. *Under-ſide.* Theeyes are of a dark brown, nearly approaching to black. The palpi, legs, breaſt, and the whole of the under-wings, together with the tips of the ſuperior ones, are of a fine bright greeniſh-yellow. The ſuperior wings have two black ſpots, as on the upper-ſide; and the tendons of the inferior ones ſeem edged or bordered with duſt-like ſpecks.

The expanſion of the wings is two inches.

This is the deſcription of the female; the male has only one black ſpot, excluſive of the black tip.

The caterpillar, which is green, feeds chiefly on cabbage; it changes to the chryſalis in September, and the fly appears about the middle of May. It breeds in gardens, but roves over commons, woods, fields of wheat, &c. and is frequently met with even in towns.

Fig. 3. CYANE, or ZIGZAG. The head, thorax, and abdomen, are of a dark brown. The ground of the ſuperior wings is black, but of an orange-brown towards the thorax, with a long daſh of light blue down the long tendon, which is the ſecond from the ſlip or lower-edge. About half way there is a broad, irregular, whitiſh, or cream-coloured bar, which croſſes the wing to within a quarter of an inch of the fan-edge. The under-wings are of a milky or cream-coloured white, having three rows of black ſpots croſſing the wings from ſide to ſide, parallel to each other, amounting to about twenty-one in each wing. They are all bordered with a band of black, which is about a quarter of an inch broad, ornamented with a beautiful zigzag line; and which, taking it's beginning from the tip or apex of one of the ſuperior wings, continues along round the borders of all the four wings till it reaches the tip of the other ſuperior one.

Fig. 4. *Under-ſide.* The under-ſide has a broad zigzag border, ſimilar to that of the upper, but a little narrower in the under-wings. The general ground of the four wings is a kind of cream-colour; the inferior wing being ſpotted ſimilar to the upper-ſide, pretty large, and crouded near the thorax, where the ground is blue, as it is on the table-tendon, or upper-edge. The ſuperior wing is ornamented with black ſpots or clouds of various forms. There are four remarkable round or oval ones near the outward border; and thoſe which ſeem to croud near the ſhoulders are ornamented with blue and red, which ſeparate or ſurround them, not eaſy to be deſcribed. The legs are white; and the thorax is of a dark brown, having two black marks on each ſide.

The expanſion of the wings is three inches and three-quarters.

This fly came from Siam, in the Eaſt Indies.

Fig. 5. HIGH BROWN FRITILLARIA; the ADIPPE, Nymphales, of Linnæus. The antennæ are pretty long, and almoſt round; the eyes are large, and of a deep red-brown; the thorax and abdomen are of a dark brown, covered with brown hair of a greeniſh gloſs. The wings are all of a yellow-brown orange-colour, prettily bordered with a double black line on the fan-edges all round; above which, in each membrane, there is a ſpot in the form of a creſcent, which compleats the agreeable uniformity of the border. The other parts of the wings are ſpotted all over with black of various forms, not eaſily to be deſcribed; but many of them are round, and not ſo large as a hemp-ſeed.

Fig. 6. *Under-ſide.* The under-ſide is much like the upper, but has no double line in the border. The thorax, as well as the legs, are of a yellow orange-brown, with a greeniſh gloſs. The inferior wings are of a fine golden yellow, ornamented with about two and twenty ſpangles, ſhining like ſilver or mother-of-pearl: and a few others are alſo ſeen on the tips of the ſuperior wings, but conſiderably leſs, and only about ſix in number.

The expanſion of the wings is two inches and a half.

The caterpillar, which is of the briſtly ſort, feeds on the violet. It changes to the chryſalis about the end of May, and the fly appears in plenty at the latter end of June. It flies in or near woods, and is very ſtrong, bold, and rapid in flight.

The inſect above deſcribed is a male, and may be known by the thickneſs and blackneſs of the firſt and ſecond fan-tendons, which are loaded with hair riſing high on each ſide, ſo as to form a ridge at the top.

Fig. 7.

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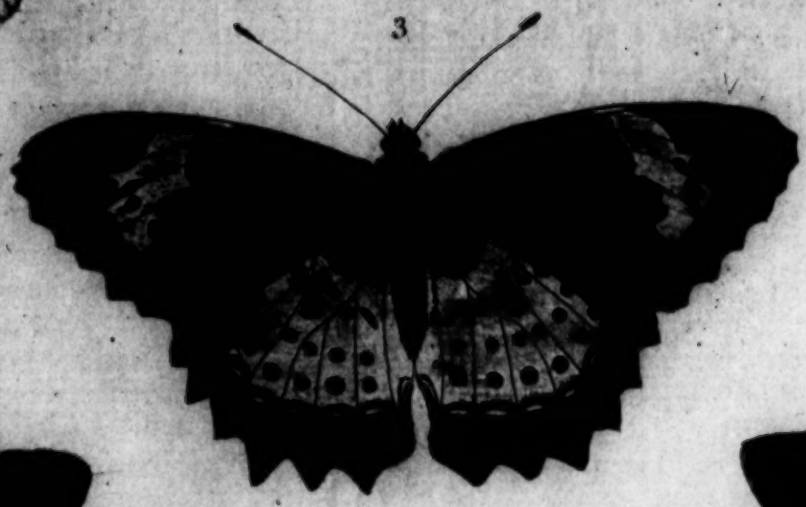
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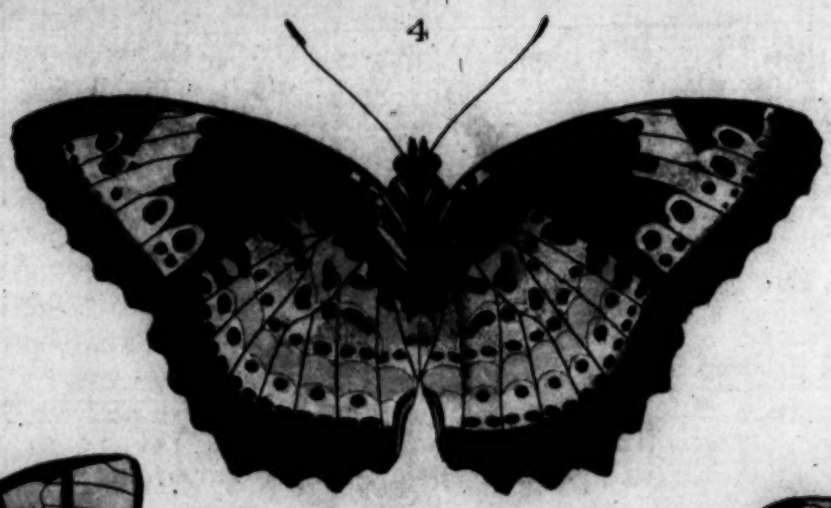
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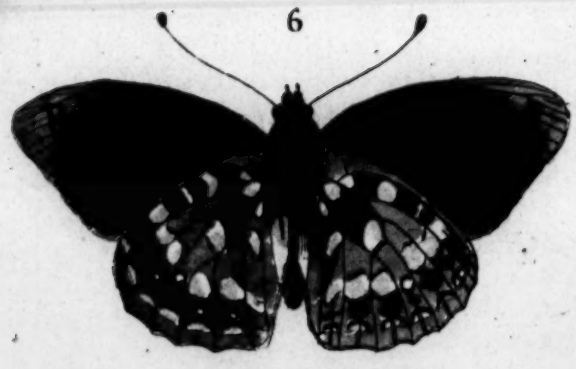
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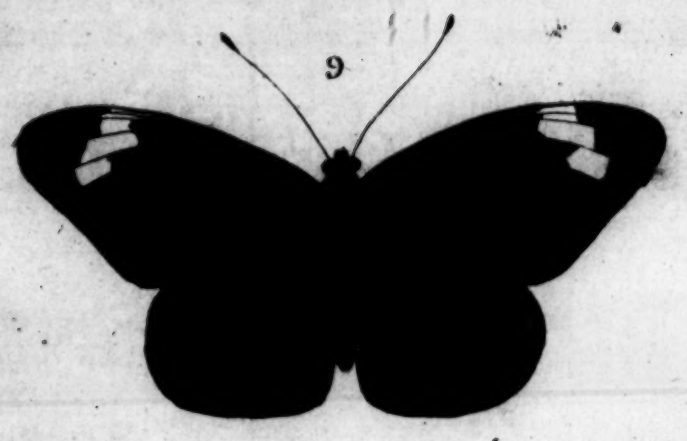
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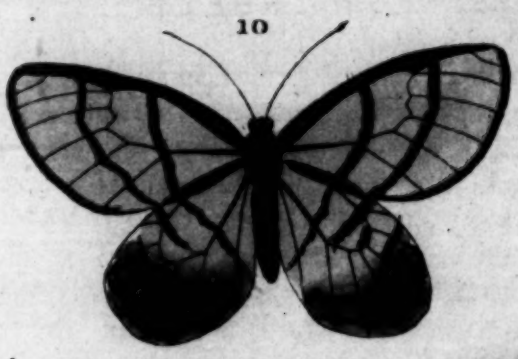
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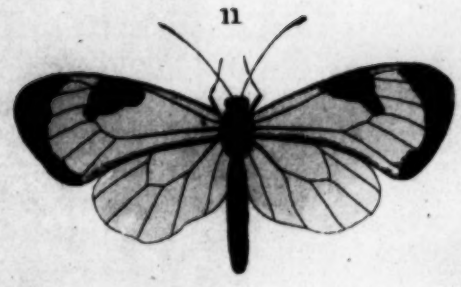
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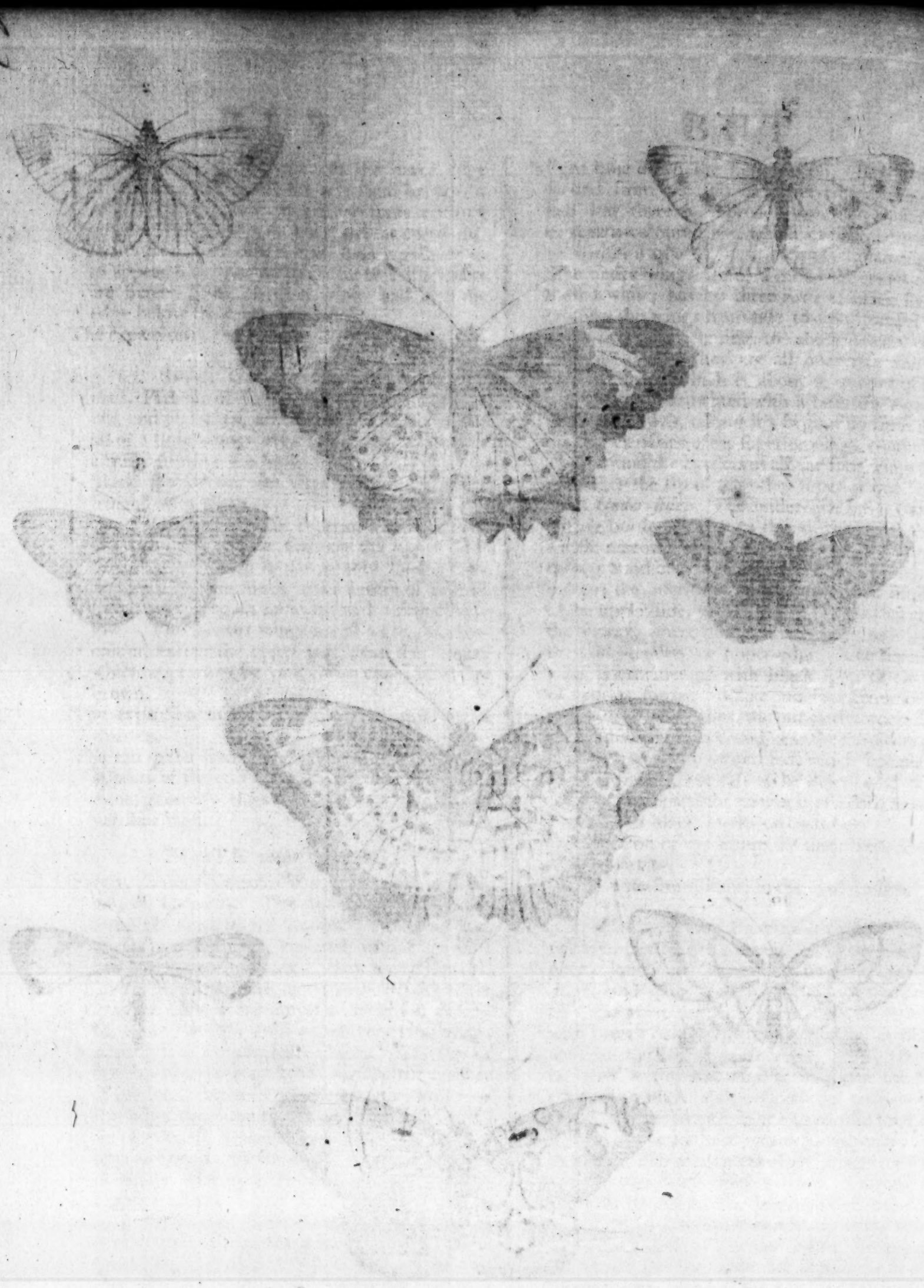
BUTTERFLIES. Plate III.

Plate XXIII. Published as the Act directs, by Harrison & C.° March 26. 1785. W.m Harris del. et sculp.



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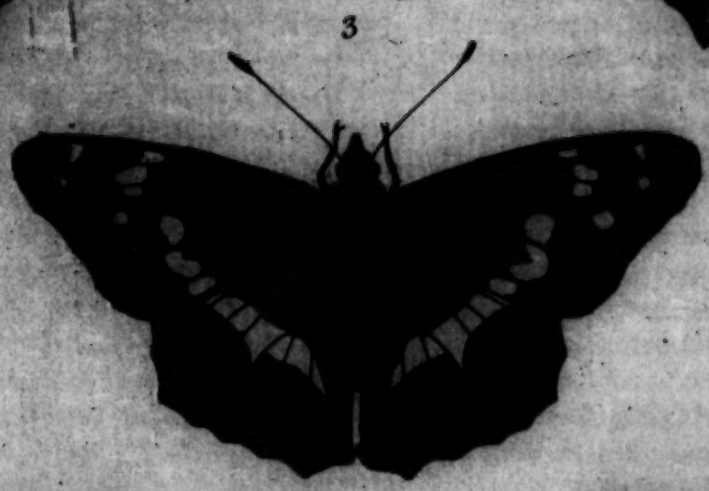
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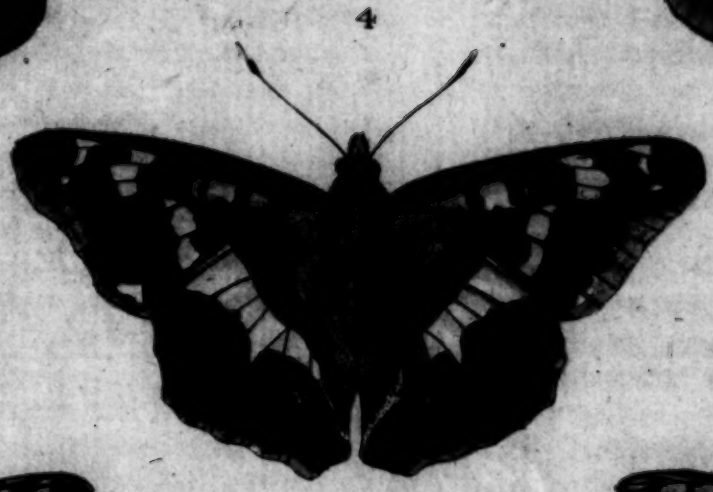
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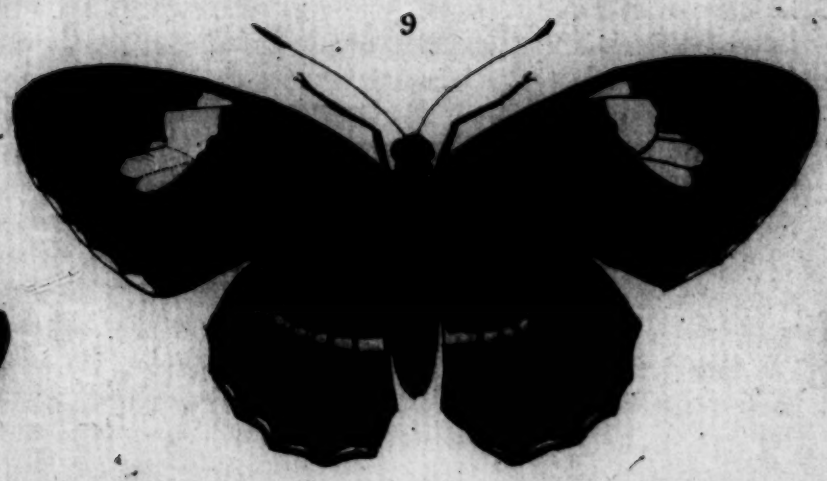
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BUTTERFLIES, Plate IV.

Plate XIX.

Published as the Act directs by Harrison & Co. Feb. 19. 1785.

Miss Harris del et sculp.

Fig. 7. FRITTILLARIA, PEARL-BORDERED; the EUPHROSYNE, Nymphales, of Linnæus. The antennæ of this fly are full as large as thoſe of the High Brown Frittillaria, and very like them in form. The entire upper-ſide is of a fine warm yellow-orange. The fan-edge, cloſe to the fringe, is one continued chain of triangular ſpots, which unite in a ſtring along the outer edge of each wing, and another line of the ſame triangular ſpots juſt above compoſes an uniform border. Within the wing, on the fan-membranes, about the eighth of an inch, is another row of round ſpots, one on each membrane: on the ſuperior wing are ſeven, and on each of the inferior ones ſix only. Thoſe parts of the wings which are next the thorax and abdomen, are occupied by a great variety of multiform ſpots of black.

Fig. 8. *Under-ſide.* The under-ſide is yellower and much paler than the upper. The black ſpots near the fan-edges are ſo faint as hardly to be ſeen. The thorax is clouded with dark orange-red; and there are ſeven ſilver or pearl-coloured ſpangles along the border or lower edge of the wing. In the very centre, on the table-tendon, is another ſpangle of an oblong form, not ſo big as a lint-ſeed; and there is alſo one nearly of a triangular form cloſe under the thorax.

The expanſion of the wings is two inches.

The caterpillar changes to a chryſalis at the end of April; and the fly appears about the middle of May. It flies only in woods, or lanes in their vicinity, never being above a yard from the ground, on which it is fond of ſitting, when undiſturbed.

Fig. 9. ORANGE DAPPLED. The head, thorax, and abdomen, are black; the two former being full of ſmall white ſpots. The ſuperior wings are of an orange clay-colour; but the tips are black, ſoftening off towards the middle of the wing: and this black part is filled with ſpots of a clear white; one, in particular, remarkably large, being at leaſt half an inch long. However, as four of the tendons interſect this large ſpot, it ſeems as if divided, and has the appearance of five ſpots united together. A line or border of twelve white ſpots ornaments the fan-edge. The inferior wings are of the ſame colour as the ſuperior ones, having four black ſpecks in the middle, each joining to a tendon. The whole of the fan-edge is irregularly bordered with a narrow black edging, with a line of white ſpecks, two in each membrane, as in the border of the upper.

The under-ſide is very ſimilar, though not exactly like the upper.

The expanſion of the wings is three inches.

It is found in New York, Maryland, and ſeveral parts of the Weſt Indies. It flies very ſlow, and is fond of ſettling in ſhady and marſhy places.

Fig. 10. The PIERA, Heliconii, of Linnæus. The antennæ are like hairs; and the knobs, being thin, are hardly diſcernible. The head, thorax, and abdomen, are of a dark brown; of which colour alſo are the ſector edges, the ſector tendons, and membranes; and the fan-edge is tinged with brown. The ſuperior wings are tranſparent like gold-beaters ſkin, or thin horn, and have no farina upon them: they are divided into three equal parts by two brown bands; that next the thorax continuing downward through the inferior wing, and ending near the anus or lower end of the abdomen, on the edge of the abdominal membrane. The inferior wing is of the ſame tranſparent brown, except the lowermoſt half, which is tinged with roſe or pink-colour. At the outer corner there is an ocellus, or ſmall eye, about the ſize of a hemp-ſeed, which is formed by a gold-coloured ring, ſurrounding a black ſpot, in which (not in the middle, but towards the outer part next the corner of the wing) is a ſmall white ſpeck. A brown line ſeems to divide this part or corner of the ring from the reſt. The bottom or fan-edges of theſe wings are bordered with a narrow crimſon edging, above which, about the eighth of an inch, is another crimſon line or band; but this laſt band, which is compoſed of united arches, does not extend ſo far, ſtopping at the eye near the outer corner.

The expanſion of the wings is two inches and a quarter.

This fly comes from the Weſt Indies, where it is ſeen flying in the month of May, about the ſhrubs and ruſhes in the ſavannahs.

Fig. 11. ISINGLASS CLOUDED HELICONII. The antennæ are like threads; and the head, thorax, and abdomen, are brown. All the wings have the tranſparency of glaſs. The ſuperiors have each a large triangular ſpot near the middle of the ſector, which extends it's point a quarter of an inch towards the centre. The outer or fan-edges are bordered with a pale black band or edging; and the ſector, as well as the lower or ſlip-edge, is brown. The inferior wings are quite clear, and free from markings.

The expanſion of the wings is two inches.

This fly comes from Jamaica, where it frequents the ſavannahs in June.

PLATE THE FOURTH.

Fig. 1. INDIAN WHITE-ADMIRABLE; the IPHICLA, Nymphales, of Linnæus. The eyes are brown, and the thorax and abdomen nearly black. The ſuperior and inferior wings are of a fine olive black, with a greeniſh caſt or gloſs. At the tip of each of the ſuperior wings there is a large orange-coloured ſpot, of an irregular ſhape, and above a quarter of an inch in diameter. From this part of the wing, and near this ſpot, riſes a broad pearl-coloured bar, which forms a direct line; and, croſſing the ſuperior and inferior wings, ends near the abdominal corner, where it is ſtopped by a large ſpot of orange. There are ſome occult markings to be ſeen through the black part of the wings, which it is difficult, if not impoſſible, to deſcribe.

Fig. 2. *Under-ſide.* The palpi and thorax are white, and the legs are of a dark brown. The wings in general are of a reddiſh purple, watered all over with reddiſh brown lines parallel to each other; this brown colour is pretty broad round the edges of the fine purple broad bar which extends acroſs the two wings, as on the other ſide, but conſiderably ſtronger in colour.

The expanſion of the wings is two inches and a half.

This fly, which is amazingly ſwift in flight, is fond of ſettling on the ground in a ſhady place; and will permit you to come pretty near it, when it darts off with ſuch velocity, that the beſt eyes cannot diſcover the courſe it takes. It is common both in North and South America.

Fig. 3. PURPLE EMPEROR; the IRIS, Nymphales, of Linnæus. The antennæ are black, having a little brown ſpeck on the extremity of each. The head, thorax, and abdomen, are brown, but covered with fine hair of a dark but gloſſy aſh-colour. The ſuperior and inferior wings are very dark near the margins or fan-edges, but all the other parts are changeable, according to the different lights in which this beautiful inſect is viewed. Sometimes it appears of a ſooty black; and, at others, the eye is ſuddenly dazzled with a reſplendent glow of vivid purple: ſo that, by frequently turning the fly into different poſitions, the colours play and ſhift through all the gradations, from a ſooty black to the moſt brilliant purple, in ſuch a manner as undeſcribably to charm the eye with a delightful and amazing variety. The borders of the wings are ornamented with a row or line of miſty orange ſpots; and, towards the abdominal corners of the inferior wings, there are two eye-like ſpots, one on each, which conſiſt of a round black ſpot with a ſmall ſpeck of white in the middle, the black one being encircled with a gold-coloured ring. The ſuperior wings have each a number of white ſpots; three of which, extending from the middle to the lower or ſlip-edge, ſeem to join another band that croſſes the inferior wing, and reaches to that part which is neareſt the anus, or end of the abdomen.

Fig. 4. *Under-ſide.* The eyes appear of a red brown, having a white ſtreak under each. The palpi are white; and the thorax, as well as the eyes, are of a blueiſh or aſh colour. The white ſpots are very ſimilar to thoſe on the upper-ſide; but the field or ground-colour is of a reddiſh brown, variegated with black and orange. The table-membrane is of a pale bloſſom-colour, with two ſpots of black. Towards the lower corner of the wing, there is a large orange-coloured ſpot about three eighths of an inch in diameter, the centre of which has a black ring, and within that there is another of purple. The inferior wings are of a dull pearl-colour near the body or thorax, as well as on the outer edge; but, near the white bar or band which croſſes the middle, it is of a blood-red brown. The eye on the upper-ſide near the abdominal corners appears very faintly on this ſide.

The expanſion of the wings is three inches.

The caterpillar, which feeds on ſallow, is of a green colour, and has two horns on it's head, like a ſnail or ſlug. It is in the caterpillar ſtate during the winter, changes into a chryſalis, hanging by it's tail on the under-ſide of a leaf in the ſpring, and the fly appears about the end of June. It flies very high; and ſports round the tops of oak and aſh trees, where it often ſettles on a leaf; and, on ſeeing any ſmall fly, or other inſect, paſs by, immediately purſues it a little way, when it goes round the top of the tree, and is ſure to ſettle again on the ſame leaf.

BUT

The female is like the male in every reſpect, except that it has not the beautiful purple hue on the upper ſide.

Fig. 5. CLOUDED YELLOW; the HYALE, Danai, of Linnæus. The antennæ are reddiſh, and ſo are the head and ſhoulder parts of the ſuperior wings. Theſe wings are of a cream colour, having a round black ſpot in the middle. Each fan-edge and tip is covered with a broad irregular black border, which at the tip is half an inch wide. In this border are two or three cream-coloured ſpots nearly in the form of a heart, and the fringe at the edges is red. The inferior wings are of a diſmal greyiſh aſh-colour, having a double orange-coloured ſpot in the middle. The abdominal groove is of a greeniſh yellow, and the fan-edges at and near the outer corner of the wings are clouded with black. The thorax and abdomen are black, but thinly cloathed with yellowiſh hair.

Fig. 6. *Under-ſide.* The eyes are black; the palpi are yellow, but reddiſh at their extremities; and the legs are alſo red. The ſuperior wings are yellow, but paleſt near the middle parts. Within about a quarter of an inch of the fan-edge there is a row of black ſpots, three of the lower ones being large and conſpicuous, and the loweſt of the ſame ſize as that in the middle of the wing on the bar tendon, which is about the bigneſs of a ſmall hemp-ſeed. The inferior wings are of a dirty or greyiſh yellow; in each of which, on the bar tendon, are two ſpots in double rings of red, cloſe together, the central parts of which appear like reddiſh pearl, a little inclining to bloſſom-colour. The fringes of the wings, as well as the ſector-edges of both wings, ſuperior and inferior, are red.

The expanſion of the wings is two inches and a quarter.

It flies in the middle of Auguſt; is very fond of meadows, and particularly attached to fields of clover.

Fig. 7. MARBLED-WHITE; the GALATHEA, Nymphales, of Linnæus. The head, thorax, and abdomen, are black, but covered with whitiſh hair. The ſuperior and inferior wings are of a greeniſh cream-colour, teſſelated or chequered all over with multiform black ſpots: round the borders of each wing, near the fan-edge, is a line or chain of ſix white ſpots; thoſe on the inferior wing, in particular, being ſomewhat in the form of a heart. The fringes are white. On the lower part of each wing, near the abdominal corner, there are three eye-like rings of white, with a white ſpeck in the middle of each.

Fig. 8. *Under-ſide.* The palpi are white, edged with black; the wings are the ſame colour as on the upper-ſide, only that they ſhew the outlines of the markings on this, except in the middle of the ſuperior wing, which is black, the inferior ones being duſky. A ſmall eye is ſeen near the tip of the ſuperior wing, and there are two more eyes near the outer corner, as well as four in a line near the abdominal corner of each of the inferior wings.

The expanſion of the wings is two inches.

The caterpillar, which feeds on graſs, changes into the chryſalis in May, and the fly generally appears about the 6th of June.

It

It is very common in graſs fields by the ſides of woods and hills, ſometimes ten or a dozen playing together, and now and then taking a flight all together till they are quite out of ſight.

Fig. 9. WHITE-SPOT SWALLOW-TAIL; the ANCHISES, Equites, of Linnæus. The eyes, thorax, and abdomen, are black. The ſuperior wings are of a fine browniſh black, having one large white ſpot in the middle, which begins about the middle of the upper or ſector edge, croſſes the end of the table-tendon, and (entering ſome way into the ſecond and third fan-membranes) ends within half an inch of the fan-edge. This ſpot is a quarter of an inch wide, and near an inch long. The inferior wings are alſo of a browniſh black, having a broad band of red on each wing in a right line with each other, and croſſing the abdomen at right-angles. This bar, which is about half an inch wide, and near an inch long, lies within a quarter of an inch of the lower or fan-edge. It ſeems by the tendons to be divided into five parts; and each part being round at the bottom, the whole forms a pleaſing ſcallop. At the end of this bar, near the outer corner, is a ſmall ſpeck of red.

The under-ſide is preciſely the ſame as the upper, except the body, which is black, embelliſhed with twelve deep crimſon-ſcarlet ſpots; two under the eyes, one on each ſide the bottom of the thorax, and eight on the abdomen, placed in pairs.

The expanſion of the wings is three inches and three-quarters.

The caterpillar feeds on the orange-trees in almoſt all parts of America, eſpecially in the iſland of Jamaica. The fly, which is exceedingly ſwift, frequents ſhady places, and is not eaſily followed by the human eye.

Fig. 10. PURPLE HAIRSTREAK; the QUERCUS, Plebeii, of Linnæus. The antennæ are very ſtraight, and ſpotted with ſpecks of white from one end to the other. The eyes are black; the head, thorax, and abdomen, are likewiſe black, but cloathed with lead-coloured hair. The wings, both ſuperior and inferior, are of a fine black, except that half of the ſuperior one next the thorax, which is of a moſt brilliant and beautiful blue. At the bottom of the inferior wings, near the abdominal corner, there are two ſhort tails, each about the eighth of an inch long.

Fig. 11. *Under-ſide*. The under-ſide is of a lead-colour. The ſuperior wing has a white line croſſing the fan-membranes, through the wing, and reaching from the ſector-edge to the ſlip or bottom-edge, parallel to the outer or fan-edge, at the diſtance of about a quarter of an inch. Between this line and the outer-edge there are two bright orange-coloured ſpots. The inferior wing has a ſimilar line, but at a greater diſtance from the fan-edge, and ſo as to admit of three orange-coloured ſpots near the abdominal corner, each having a ſmall black ſpeck in the centre. Theſe ſpots are in a line, and the line is continued by four other ſimilar ſpots extending to the outer corner of the wing.

This is the deſcription of the male: but the female is like the male in almoſt every reſpect, except that ſhe is larger, and her upper-ſide is all of a fine deep blue, duller or brighter according to the poſition in which ſhe is ſeen.

The expanſion of the wings is one inch and a half.

The caterpillar, which feeds on oak, changes into a chryſalis the beginning of June, and the fly comes forth about the middle of July. It is only to be found in or near woods, and is fond of playing with it's companions round ſmall oaks.

It may not be improper to add, that the wings of the ſmalleſt of the Papillio or Butterfly tribe are not more than half an inch from tip to tip; while thoſe of the largeſt, called by Marian the Great Atlas, have an expanſion of at leaſt ten inches.

BUTTERFLY FISH. This fiſh, which is caught in the Adriatic Gulph in the winter ſeaſon, is about eight inches long, has a thick head, but becomes very ſlender towards the tail. The colour is of a light blue, or aſh, with olive or dirty green ſtripes. The eyes are pretty large, and placed near each other on the top of the head; and, above each eye, ſome of theſe fiſhes have a minute fin. The fore-teeth are long and round, placed near each other, and very regular. The back fin riſes very high; and near the top of the fifth ray there is a very beautiful ſpot reſembling an eye, ſurrounded with a white ring, and ending at the eighth ray; by which mark this fiſh may be readily diſtinguiſhed from all other ſpecies: this fin is variegated with a dirty green, or olive and blue, and irregular brown and white ſpots; and the belly is ſomewhat prominent, and deſtitute of ſcales.

BUTTERFLY SHELL. See VOLUTA.

BUZ. A fiſh caught in the German lakes, more commonly known by the name of albula.

BUZZARD. A rapacious bird of the long-winged hawk kind, belonging to the genus of falcon in the Linnæan ſyſtem, of which there are ſeveral ſpecies.

BUZZARD, COMMON. The length of this ſpecies is twenty-two inches, and the full expanſion of it's wings fifty and upwards. It is the moſt common of all birds of the hawk kind in England. It breeds in extenſive woods, generally fixing on the old neſt of a crow, which it enlarges, and lines with wool and other ſoft materials. It lays two or three eggs, which are ſometimes wholly white, and at others ſpotted with yellow: and when the female happens to be killed during the time of incubation, the cock hatches and rears the brood. The young conſort with the old ones for ſome little time after they quit the neſt, which is not uſual with other birds of prey, if we except the butcher-birds.

The Common Buzzard is very ſluggiſh and inactive, and much leſs on the wing than other hawks, remaining perched on the ſame bough for the greateſt part of the day, and always found near the ſame place. It feeds on birds, rabbits, moles, and mice; and will likewiſe, in caſes of neceſſity, devour frogs, earth-worms, and all ſorts of inſects.

The colour of this bird is ſubject to conſiderable variations. In ſome, the breaſt and belly are brown, and only marked acroſs the crop with a large

large white creſcent: uſually, however, the breaſt is of a yellowiſh white, ſpotted with oblong ferruginous ſpots, pointing downwards; the chin is likewiſe ferruginous; the back of the head, the neck, and the coverts of the wings, are of a deep brown, edged with a pale ruſh-colour; the ſcapular feathers are brown, but become white towards their roots; the middle of the back is covered only with a thick white down; the extremities of the quill-feathers are duſky, their lower exterior ſides being cinereous, and their interior blotched with darker and lighter ſhades of the ſame colour. The tail is barred with black and aſh colour, and ſometimes with ferruginous; the bar next the extreme tip is black, and the broadeſt of all; the tip itſelf is of a duſky white; and the irides are white, tinged with red.

Buzzard, Honey. This ſpecies is nearly of the ſame ſize as the former. The bill, and the membrane at the beak called the cere, are black, the latter being much wrinkled; the irides are of a fine yellow; and the crown of the head is aſh-coloured. The neck, back, ſcapulars, and covert-feathers of the wings, are of a deep brown; the chin is white; the breaſt and belly are of the ſame colour, marked with duſky ſpots pointing downwards; the tail is long, of a dull brown colour, and marked with three broad duſky bars, between each of which there are two or three of the ſame colour, but more narrow; the legs are ſhort, ſtrong, and thick; and the claws are large and black.

This bird generally lays two eggs, blotched over with a fainter and a deeper red. It builds it's neſt of ſmall twigs, which it covers with wool. It feeds on inſects, bees, waſps, and ſome ſorts of reptiles; and runs very ſwiftly.

Buzzard, Moor. The colour of this ſpecies, on all parts of the body, is of a ruſty brown, except the top of the head, which is of a whitiſh tawney. On the middle joint of the wings there is a reddiſh clay-coloured ſpot, reſembling that on the head; and there are dark-coloured dun feathers on the rump. The tail is of a dark yellowiſh, or light brown colour, and about eight or nine inches in length. The legs are about five inches long, of a yellow colour, and much more ſlender than thoſe of other birds of this kind. The length of the Buzzard, from the tip of the beak to the end of the tail, is a foot and a half; and the wings, when extended, meaſure four feet. The eyes are of a proportionable ſize, and their irides of a ſaffron colour. The legs are covered with feathers a little below the knees; and the general conformation of the bird is more long and ſlender than that of other birds of prey.

The Moor Buzzard never ſoars like other hawks, but commonly ſits on the ground, or on ſmall buſhes. It forms it's neſt either in the midſt of a tuft of graſs, or amongſt ruſhes; lays three eggs; is extremely fierce and voracious, preying on rabbits, young wild ducks, and other water-fowl; and, like the oſprey, feeds on fiſh. It generally frequents heaths and barren moors, from whence it has received it's name.

Buzzard, Bald, called by ſome naturaliſts the Sea-eagle. This ſpecies differs from the common Buzzard, in being white on the back part of the head, in exceeding it both in ſize and weight, in the length of it's wings, in the extreme flexibility of the exterior toe, in having angular proceſſes on the upper mandible, and in preying on fiſh. The expanſion of the wings is about five feet; the beak is ſhort, black, and hooked; the tongue is broad, and ſoft; the eyes are yellow; the legs are long; and the feet are thick, ſtrong, and of the colour of verdigris. It haunts rivers, pools, lakes, and the ſea-ſhores; builds on the ground, among reeds; and lays three or four large white eggs of an exact oval figure.

Buzzard, Spotted. This ſcarce ſpecies is about the ſize of the common Buzzard. The bill is black; the cere and legs are yellow; the crown and the hind part of the head are white, ſpotted with a light reddiſh brown; and the back and ſcapulars are of the ſame colour, edged with white. The quill-feathers are duſky, barred with cinereous; the underſide of the neck, breaſt, belly, and thighs, are white, marked with a few ruſty ſpots; the rump is white; the middle feathers of the tail are barred with white and deep brown, and the others with a lighter and darker brown.

Buzzard, Turkey, or Catesby. This ſpecies is ſomewhat larger than a wild-gooſe. The feathers are partly black, light, and grey; the beak is thick, crooked, and pointed; and the claws are ſharp, and very ſtrong. Theſe birds can diſcover their prey at a vaſt height; and ſo very formidable are they, that if an ox lies down to reſt, and a company of theſe voracious animals diſcover him, they immediately fall on, and devour him.

Buzzard, Ash-coloured, of Edwards. This bird is a native of Hudſon's Bay, where it chiefly preys on the lagopus avis, or white partridge. The bill is of a blueiſh lead colour, covered with a ſkin of the ſame hue; the head and fore-part of the neck are covered with feathers having dark brown ſpots in their centres, and the reſt are white; which intermixture has a very agreeable effect. The dark ſpots on the breaſt are larger than thoſe on the head. The ſides and belly are covered with dark brown feathers marked with roundiſh white ſpots; and the thighs are covered with ſoft, looſe, white feathers, with long irregular daſhes of dark brown down their ſhafts. The covert-feathers on the inferior ſide of the tail are tranſverſely barred with black and white; and the whole upper ſide, neck, back, wings, and tail, are covered with browniſh aſh-coloured feathers, darker in their centres, and lighter towards their edges. The upper ſide of the tail is marked with narrow bars of a clay colour, the underſide being aſh-coloured, barred acroſs with white. The legs and feet are of a blueiſh aſh colour; the claws are black; and the fore parts of the legs are partly covered with duſky feathers.

BYRRHUS. A genus of inſects of the order of coleoptera, with clavated, almoſt ſolid, and compreſſed antennæ; of which naturaliſts enumerate five ſpecies.

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CABIAI, or CAPIBARA. An animal referred by ſome naturaliſts to the hog kind, on account of a very trivial reſemblance between them; but which, if cloſely examined, will be found to differ in the moſt obvious particulars from that claſs of animals.

The Cabiai, with reſpect to the ſhape of it's body and the coarſeneſs of it's hair, reſembles a hog of two years old. Like it, the neck is ſhort, and the back round and briſtly; like it, too, this animal is fond of water and marſhy places, and feeds indifferently on animal and vegetable food. On the other hand, the eyes are larger; and the ſnout, inſtead of being rounded as in the hog, is divided like that of the hare or rabbit, and furniſhed with thick ſtrong whiſkers; the mouth is more contracted; and the number and ſhape of the teeth are different, for it has no tuſks. Like the peccary, another ſingular animal, the Cabiai is deſtitute of a tail; and, diſſimilar to all others of this kind, inſtead of a cloven hoof, it is in a manner web-footed, and thus entirely adapted for an aquatic life. The fore-hoofs are divided into four parts, and thoſe behind into three; and between the diviſions there is a prolongation of the ſkin, ſo that the feet, when ſpread in ſwimming, are capable of beating a greater ſurface of water.

As the feet of this animal are thus conſtructed for the water, ſo it ſeems to delight entirely in that element; for which reaſon ſome naturaliſts have given it the name of the water-hog. It is a native of South America; and, like the otter, chiefly frequents the margins of lakes and rivers. It preys on fiſh, which it ſeizes with it's hoofs and teeth, carries to the edge of the water, and feaſts on at leiſure; and it alſo devours fruits, corn, and ſugar-canes. The legs being long and broad, it is often ſeen ſitting on it's haunches; and, when alarmed, it's cry reſembles the braying of an aſs rather than the grunting of a hog. It ſeldom ventures from it's retreat, except during the night, and then always in company: however, it never makes diſtant excurſions; for, as it's feet are ill-adapted to running, it's only place of ſafety is the water, into which it plunges when purſued, and remains ſo long at the bottom as generally to tire the patience of the hunter.

Even in a ſtate of native liberty, the Cabiai is a gentle animal; and, when young, is eaſily tamed; it will even anſwer to it's name, and diſcover a fond attachment to the perſon who uſually feeds it. The fleſh of this creature is ſaid to be fat and tender; but, from the nature of it's food, it has a fiſhy taſte. The head, however, is eſteemed excellent; and in this reſpect it reſembles the beaver, the fore-parts of which taſte like fleſh, and the hinder like the fiſh it feeds on.

CABILJAU. An African fiſh, of an aſh-colour, covered with large ſcales, and marked down the back with a black liſt, which runs from the head to the tail. It grows to the length of about two feet and a half, and has very hard fins. The fleſh is reckoned extremely nutritive.

CABILJAU. A name uſed by ſome naturaliſts to expreſs the common cod-fiſh, the morhua and aſellus major of naturaliſts.

CABOS. A ſpecies of eel-pout, which grows to the length of two feet, and is very fat. The ſkin is extremely ſmooth, of a browniſh colour, and deſtitute of ſcales; the ſnout is pale, ſpotted with black; and the head is ſhort. The fleſh of the Cabos is well-flavoured and wholeſome.

CABOTE. A fiſh of the cuculus kind, more uſually known among authors by the name of the corax.

CABURE. A Brazilian bird of the owl kind, about the ſize of a ſmall thruſh. The bill and irides are yellow; the legs are ſhort, and covered with feathers; the claws are black; the tail is broad, and of the colour of faint umber waved with white. The entire upper part of the head, the back, and the wings, are likewiſe of the ſame colour ſpotted with white, the ſpots on the head and neck being very ſmall, but thoſe on the wings larger; and the breaſt and belly are white, variegated with ſpots of a dull brown. The Brazilians keep this bird tame, on account of it's many diverting tricks.

CACABOGA. An American ſerpent, by ſome naturaliſts accounted the ſame with the tareiboia, or black water-ſnake, of that part of the world. It is, however, deſcribed by others as of a yellow colour, living near houſes, and deſtroying abundance of poultry, though it's bite is not fatal.

CACHALOT. A ſetaceous fiſh, having teeth in the lower jaw only; claſſed by Linnæus under the phyſeter.

This animal has generally been referred to the ſame claſs with the ſpermaceti whale; but the ingenious Pennant very properly makes a diſtinction between them. Naturaliſts enumerate ſeven varieties of this ſpecies; the principal of which are, the blunt-headed Cachalot, the round-headed Cachalot, and the high-finned Cachalot.

This tribe of fiſhes is of inferior dimenſions to the whale properly ſo called, not being in general above ſixty feet long, and ſixteen in circumference. In conſequence of their being more ſlender, they are conſiderably leſs unwieldy than the common whale; are capable of remaining longer at the bottom of the ſea; and afford a ſmaller quantity of oil in proportion to their magnitude. Even in the common whale, the head makes a third part of the bulk; but in this ſpecies it conſtitutes at leaſt one half. The tongue of the Cachalot is ſmall; but the throat is ſo enormouſly wide as to be capable of admitting an ox entire. In the ſtomach of the whale ſcarcely any thing is to be found; but in that of the Cachalot there are frequently vaſt quantities of fiſh of different kinds; ſome whole, and others half-digeſted, ſome ſmall, and others eight or nine feet long. The Cachalot is therefore as deſtructive among leſſer fiſhes as the whale is harmleſs; and, at one gulp, can ſend a ſhoal of them down it's enormous gullet. Linnæus informs us, that this animal is ſo formidable to dolphins and porpoiſes, as often to drive them on ſhore.

But how terrible ſoever this fiſh may be to it's fellows of the deep, it is by far the moſt valuable and moſt deſired by man, as it yields two very precious drugs, namely, ſpermaceti and ambergris. The uſe of theſe, either for the purpoſes of luxury or medicine, is ſo univerſal, that the capture of this animal, which alone ſupplies them, turns out to

very great advantage; particularly ſince the art has been diſcovered of converting all the oil of this creature, as well as the brain, into the ſubſtance called ſpermaceti.

This production, as it is naturally formed, is found in the head of the animal; and, in fact, is nothing elſe but the brain. The exterior ſkin of the head being ſtripped off, a covering of fat, about three inches thick, preſents itſelf; under which, inſtead of a bony ſkull, the Cachalot has only another thick ſkin, which ſerves to cover and defend the brain; and the firſt cavity or chamber of the brain is filled with that ſpermaceti which is ſuppoſed of the greateſt purity and the higheſt value. This cavity generally yields about ſeven barrels of the cleareſt ſpermaceti; which, when thrown on water, coagulates like cheeſe. Below this there is another chamber, exactly over the gullet, which is about ſeven feet high; and this alſo contains the ſame fluid, but of inferior value. It is diſtributed in this cavity like honey in a hive; in ſmall cells, ſeparated from each other by membranes like the interior ſkins of eggs. In proportion as the oily ſubſtance is drained from this part, it fills afreſh from every part of the body; and from this is generally obtained about nine barrels of oil. Beſides theſe, the ſpinal marrow, nearly as thick as a man's thigh, and which reaches all along the back-bone to the tail, where it becomes extremely ſmall, affords no inconſiderable quantity of the ſame valuable ſubſtance.

Spermaceti, which is uſed in the compoſition of many medicines rather to give them conſiſtence than efficacy, was originally ſold at a very high price, both from the numerous virtues aſcribed to it, and the ſmall quantities that the Cachalot was deemed capable of ſupplying: at preſent, however, the price is greatly fallen, owing to it's little efficacy in medicine, and the immenſe quantities now produced by a modern invention of converting the oil into ſpermaceti. This operation is performed by boiling it with a lee of potaſh, and hardening it after the manner of ſoap; and ſo plentiful is ſpermaceti now become, that candles are made of it, which are ſold cheaper than thoſe compoſed of wax.

The ambergris which is ſometimes found in this ſpecies of whale was long conſidered as an heterogeneous ſubſtance, for which no origin could be aſſigned. But time, which reveals the ſecrets of nature, as well as the frauds of the intereſted, has diſcovered that it is chiefly derived from this animal. The name which is improperly given to the ſpermaceti, ſeems more juſtly to belong to this; for the ambergris is found in the place where the ſeminal veſſels are uſually ſituated in other animals. It is lodged in a bag three or four feet long, in round lumps, from one to twenty pounds weight, floating in a fluid ſomewhat thinner than oil, and of a yellowiſh colour: theſe bags never contain more than four of theſe balls; and one which weighed twenty pounds, and was the largeſt ever ſeen, was diſcovered ſingle. The ambergris, however, is not found in all fiſhes of this kind, but chiefly in the oldeſt and ſtrongeſt. It's uſes in medicine, luxury, and perfumery, are well known; though it's intrinſic value is ſmall, and it's qualities, perhaps, had better have remained unaſcertained.

CACHALOT, BLUNT-HEADED. This ſpecies is about fifty-four feet long; the greateſt circumference below the eyes is thirty feet; and the ſuperior jaw, which is five feet longer than the inferior, meaſures fifteen feet. The head is of an enormous ſize, extremely thick, and extends upwards of one-third of the whole length; the end of the upper jaw is quite blunt, and near nine feet high, at the extremity of which is the ſpout-hole. The teeth are arrayed in the lower jaw, twenty-three on each ſide, all pointing outwards; and in the upper jaw, oppoſite to them, there are an equal number of cavities, in which the ends of the teeth lodge when the mouth is ſhut. The eyes are very ſmall, and remote from the noſe. The pectoral fins are placed near the angle of the mouth, and meaſure about three feet in length; and, except a large protuberance on the middle of the back, there is no appearance of a fin. The tail is a little forked, and about fourteen feet from tip to tip. A fiſh of this kind was driven aſhore on Cramond Iſle, near Edinburgh, in December 1769.

CACHALOT, ROUND-HEADED. Upwards of a hundred of this ſpecies, of different ſizes, were caſt aſhore at one time on one of the Orkney iſlands. The head was round; the aperture of the mouth was ſmall; the teeth were an inch and three quarters long, and in their thickeſt places about the ſize of a man's thumb. There was no dorſal fin, the ſpace being occupied by ſome cutaneous aſperities.

CACHALOT, HIGH-FINNED. The ſpout-hole of this ſpecies is placed in front; and on the middle of the back there is a high fin, which that great naturaliſt Sir Robert Sibbald compares to the mizen-maſt of a ſhip. The teeth are ſlightly incurvated, and near eight inches long. A fiſh of this kind was caſt aſhore on the Orkney Iſles in the year 1687.

CADE-WORM. The Engliſh name for the phryganium, a common worm found in ditches, and uſed as a bait for fiſh. The fly produced from this worm has a long body, four brown wings, and a forked tail. About the month of Auguſt it is very frequently found on the ſurfaces of ſtagnant and other waters.

CÆCILIA. The name of a genus of ſerpents. The word Cæcilia is likewiſe uſed by ſome authors to expreſs the fiſh more uſually known by the name of the acus.

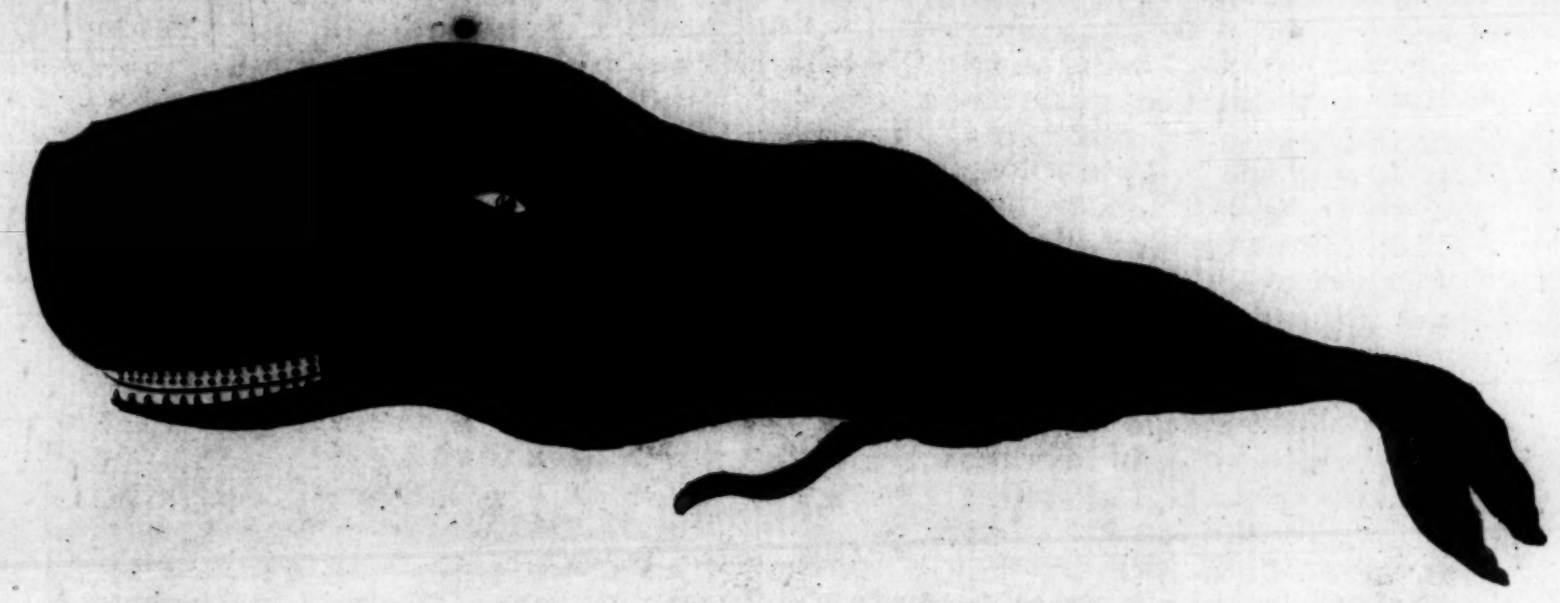
CÆRULEUS A name given by ſome naturaliſts to a bird of the thruſh kind, ſomewhat reſembling that ſpecies of blackbird commonly called the ſolitary ſparrow.

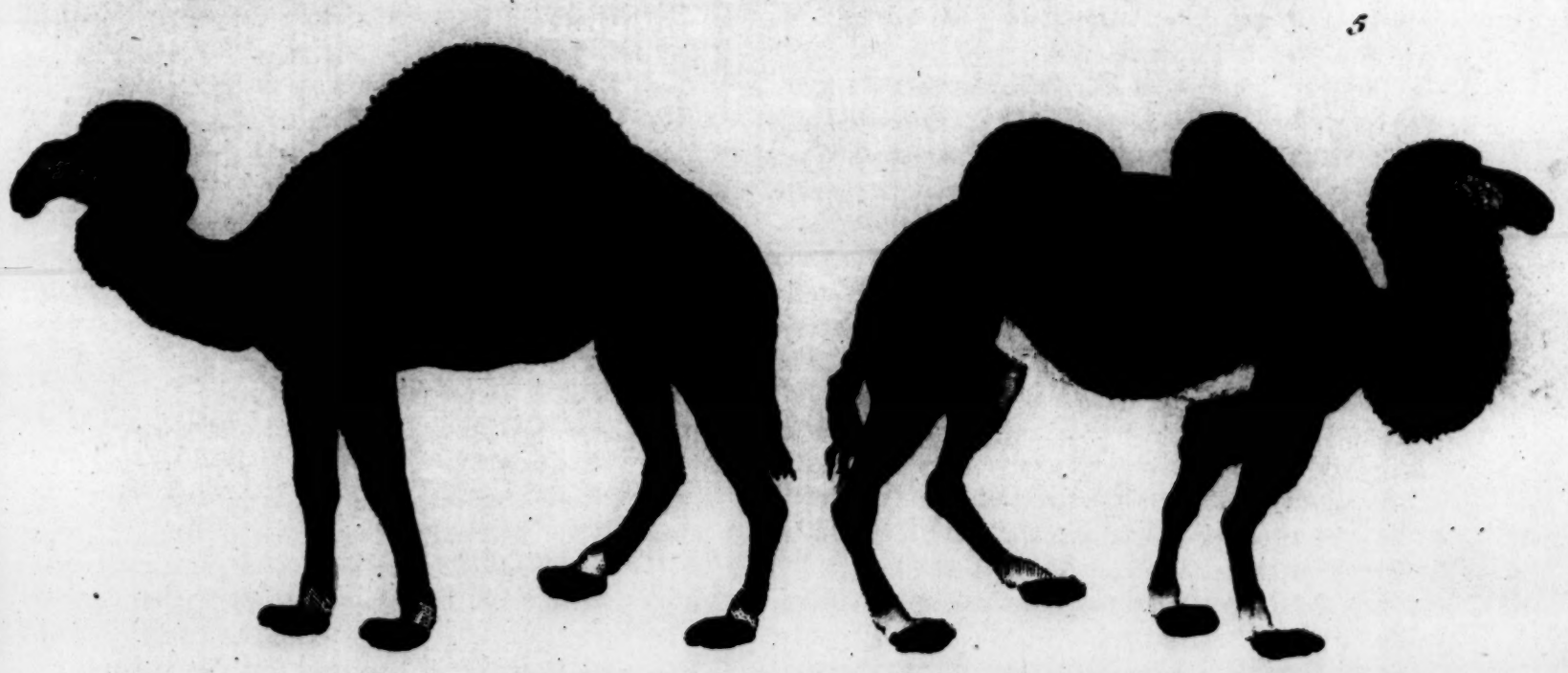
Cæruleus is likewiſe a name given by Solinus to the great Indian worm, deſcribed by Pliny and others as inhabiting the Ganges. It is extremely probable, however, that all the accounts handed down to us concerning this monſtrous animal are only falſe deſcriptions of the crocodile.

CAGADO DE AGOA. A name given by the Portugueſe to a ſpecies of American tortoiſe, uſually known among authors by it's Brazilian name jurura.

CAGADO DE TERRA. A ſpecies of American tortoiſe, ſo called by the Portugueſe; but, by the Brazilians, jaboti.

CAGAO. The Indian name for a large bird which inhabits the mountains, where it feeds on the piſtachia nuts, and many other fruits; all which it ſwallows whole. It is extremely voracious; and it's food paſſes off ſo quickly, that the piſtachias only loſe their rinds in it's ſtomach; and almonds their pulpy coverings, the kernels and ſtones being voided entire. This bird is about the ſize of a common hen, but the neck is conſiderably longer.





1. BLUNT-HEADED CACHALOT. 2. CALANDRA. 3. CALAO. 4. ARABIAN CAMEL.

5. BACTRIAN CAMEL.

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CAGIT. The name of a ſpecies of parrot very common in the woods of the Philippine Iſlands. It is of a middling ſize, and entirely of a beautiful green colour.

CAGUI. A Brazilian monkey; of which there are two ſpecies, a greater and a leſſer.

The greater Cagui, to which the name of pongi is given by the inhabitants of Congo, is a large animal, with aſh-coloured hair mixed with a little black. The face is roundiſh, and ſomewhat reſembles that of a lion; the ears are round, black, and deſtitute of hair; the eyes and mouth are likewiſe black; and the tail, which is near a foot and a half long, is covered with reddiſh hair.

CAGUI, LESSER. This tender little animal has the face of a lion: the body is no more than ſix inches long, and the tail ten; the head is about the ſize of an apple; the mouth is furniſhed with ſmall ſharp teeth; the ears are roundiſh, and encircled with fine ſmooth white hair; the tail is ſurrounded with white and duſky rings; and, except on the face, which is white, the creature has very little hair, and appears all over the body of a dark fleſh-colour. The eyes are of a reddiſh hazel hue, with black pupils; and the general outlines of it's face reſemble thoſe of the monkey tribe. The paws are covered with ſhort hair; and there are five toes on each foot, like thoſe of a ſquirrel, with pointed claws, except on the two exterior toes of the hind-feet, which have flat nails.

This animal has a very ſhrill voice, is extremely active and ſportive, and incapable of enduring a cold climate. It feeds on greens, fruit, inſects, ſnails, and ſmall fiſh.

The young, which are very ugly at firſt, cling cloſe to the breaſt of the dam. When they grow a little bigger, they hang on her back, or ſhoulders, till ſhe is weary, and then ſhe finds means to diſlodge them; on which the male immediately takes them under his protection till the female recovers.

CAHLLO. A name given by ſome authors to the lupus marinus, or wolf-fiſh.

CAIRINA. An appellation by which ſeveral naturaliſts diſtinguiſh the Muſcovy duck.

CAITAIA. A long-haired Brazilian monkey of a yellowiſh white colour. The head is roundiſh; the noſe is ſmall and flat; and the tail is held arch-ways. It ſmells of muſk; and, if treated with ſeverity, immediately ſets up a loud cry, being extremely iraſcible. The Caitaia ſeems to be the ſame animal deſcribed by Cluſius, as having been brought from Fernambuco, in Brazil; for he tells us that the body is large, with long ſhaggy hair of a fleſh-colour, and that it ſmells very fragrantly of muſk. There is another ſpecies of a deeper yellow colour, which alſo ſmells of that ſubſtance.

CALANDRA. A bird which ſeems to belong to the lark family, though it differs from that vocal claſs of birds in ſeveral particulars. The bill is of a yellowiſh brown colour, and duſky along the top of the upper mandible; and the eyes are of a dark colour. From the ſuperior part of the bill, through the eye, runs a black duſky line, above and beneath which there are interſtices of a whitiſh colour. On the ſides of the head below the eyes there are alſo ſome broken blackiſh lines; and at the beginning of the breaſt it has a remarkable black collar. The throat and fore part of the neck are whitiſh, mixed with light brown; the top of the head, the upper ſide of the neck, the back, wings, and tail, are of a reddiſh brown, the middle part of the feathers being black. The breaſt, below the collar, is of a light brown, ſpotted with a darker ſhade of the ſame colour; the belly, thighs, and covert-feathers under the tail, are white; the legs, toes, and claws, are of a fleſh-colour; the hinder claws are pretty ſtrong, as in larks; and the inſides of the wings, as well as the under-ſide of the tail, incline to aſh-colour. This bird is ſaid to be a native of Carolina.

CALANDRE. A name given by French naturaliſts to a ſpecies of inſect of the ſcharabæus claſs, extremely deſtructive in granaries. The female lays a conſiderable number of eggs; and the increaſe of theſe creatures would be very great, had not Nature ordained that, while they are in the egg, and even in the worm-ſtate, they ſhould be liable to the depredations of mites, which deſtroy far the greateſt number of them before they arrive at maturity.

CALANGAY. A name given by the natives of the Philippine Iſlands to a ſpecies of beautiful white parrot, adorned with a creſt of the ſame colour. It is about the ſize of a pigeon; is eaſily tamed and taught to ſpeak; and is ſometimes called the catatua and abacay.

CALAO. An oriental bird deſcribed by Sonnerat, apparently of the toucan kind, and about the ſize of an European crow. The bill is extremely long, bent into an arch repreſenting a ſcythe, dentated at it's edges both above and below, and terminating in a ſharp point: it is furrowed acroſs, both above and below, for upwards of two-thirds of it's length; the convexity of theſe furrows is brown, and their interſtices are yellow. The reſt of the bill is ſmooth, and of a brown colour; and at it's baſe riſes an excreſcence, of the ſame ſubſtance with the bill itſelf, which extends about one half of it's length. The eyes are ſurrounded with a brown membrane, entirely naked; but on the eyelids grows a circle of rough ſhort hair, like the human beard. The irides are whitiſh; the head, neck, back, and wings, of the male, are black, with a greeniſh caſt, changing, according as it is viewed, to blue. The top of the breaſt is of a bright reddiſh brown colour; the belly, legs, and vent, are of a deep reddiſh brown; the tail conſiſts of ten feathers, of a reddiſh yellow, upwards of two-thirds of their length terminating in a black band; and the feet, which are of a leaden hue, conſiſt of four claws each.

CALARMARY, or SLEEVE-FISH. This creature ſomewhat reſembles the cuttle-fiſh; but it has an oblong griſtly body, covered with two ſkins; in which reſpect, as well as in having ſofter fleſh, it differs from the cuttle-fiſh. However, it has ten legs; the four middlemoſt of which are pyramidal, and have rough bony tubercles on their inſides: on each ſide of theſe there is another leg, very long and thick at the extremity, covered with a kind of teſtudinous tubercles, which the two following pair have through their whole length, on their inſides. On the belly there are two receptacles, full of a very black fluid, which might anſwer the ordinary purpoſes of ink.

CALENDULA. A ſpecies of the motacilla, in the order of paſſeres; a bird found in Pennſylvania.

CALF. The young of the cow kind; an animal too well known to require a particular deſcription. See Cow.

CALF, SEA. See SEA-CALF.

CALLARIAS. A name given by ſome naturaliſts

naliſts to a fiſh of the trutteceous kind; called by Aldrovandus, tinca marina; and by Rondoletius and Geſner, phycis. It uſually grows to the length of a foot; is of a flattiſh ſhape, and covered with ſmall ſcales of a greyiſh colour, but purpliſh on the head; and the tail is roundiſh, but not forked. The fleſh is well taſted, and ſalubrious. This fiſh is common in the Mediterranean Sea; and is expoſed to ſale at Rome, Venice, and other places on the coaſts of that ſea.

CALLICHTHIS. The name of a broad and flat ſea-fiſh expoſed to ſale in the markets at Rome, under the title of the campugna; and commonly called the ſtromateus.

In the Linnæan ſyſtem, it is a ſpecies of the ſilurus.

CALLICHTHUS. A ſmall fiſh caught in the Adriatic, by ſome naturaliſts called the anthias; and it is ſuppoſed that there are no voracious fiſhes near the place where it is found. It is alſo called ſacer piſcis, and is extremely beautiful.

CALLIDRYS. A name given by Bellonius, and ſome other authors, to an aquatic bird known in England by the appellation of the red-ſhank.

CALLYDRYS, NIGRA. A bird deſcribed by Bellonius, ſuppoſed to be the ſame as the above; and called the knot in England.

CALLIONYMUS. A name applied by Appian, and ſome other authors, to the fiſh more uſually called the uranoſcopus, or ſtar-gazer.

In the Linnæan ſyſtem, it is a genus of the order of jugular fiſhes, comprehending three ſpecies.

CALLITRICHUS, or CALLITRIX. A ſpecies of monkey, with a black flattiſh face, white hairs on the ſides, and black ears. The upper parts of the body are covered with ſoft hair of a yellowiſh green colour, whence it has received the name of the green monkey; and the lower parts are covered with hair of a ſilvery colour. This animal is about the ſize of a ſmall cat.

CALLORYNCHUS. A fiſh entirely deſtitute of ſcales, but furniſhed with griſtly fins. It is of a ſilver colour on the back, and of a ſhining gold one on the ſides. The lower lip is long and broad; and, when the mouth is ſhut, it covers the upper. The teeth are only ſmooth tubercles placed in each jaw; and the noſtrils are placed on the lower part of the head, each having only a ſingle aperture. The eyes are ſituated near the ſides of the head, and are covered with a ſingle coat; the irides are of a ſilver colour; and the eyelids are oval. The belly is large and flat; and the vent is ſituated between the belly fins, nearer the tail than the head. There are ſeven fins, two dorſal, two pectoral, and two ventral; the tail conſtituting the ſeventh. The length of this fiſh, from the tip of the ſnout to the extremity of the tail, is upwards of nine inches.

CAMEL. This forms a diſtinct genus of animals in the Linnæan ſyſtem of zoology; the great characteriſtics of which are, that they want horns, which all the other genera of pecora have; that they have ſix cutting teeth in each of their lower jaws, and none in their upper; and that their upper lips are divided like thoſe of hares; and their hoofs are ſmall, and undeciduous.

There are ſeveral ſpecies of Camels: one of which is the dromedary; the only ſenſible difference between which and the Camel is, that this animal has two bunches on it's back, whereas the dromedary has but one; the latter alſo is neither ſo large nor ſo ſtrong as the former. The two races, however, generate with each other; and the mixed breed formed between them is conſidered as the beſt, the moſt patient, and the moſt indefatigable, of all the ſeveral kinds.

The dromedary, indeed, is by far the moſt numerous of the two varieties: the Camel is very ſcarce, except in Turky, and the countries of the Levant; while the dromedary is diſſeminated all over the deſarts of Arabia, the ſouthern parts of Africa, Perſia, Tartary, and the Eaſt Indies. Thus the one inhabits an immenſe tract of country; the other, in compariſon, is confined to a province: the one is a native of the ſultry regions of the torrid zone; the other delights in a warm, though not a burning climate. But neither of them can either ſubſiſt or propagate in the variable climates of the north; and they ſeem only to delight in thoſe countries where no other animals are qualified to ſuperſede their utility.

The Camel is the moſt temperate of all creatures, being capable of continuing it's march for ſeveral days without taſting water. In thoſe extenſive deſarts where the earth is every where dry and ſandy, where there are neither birds nor beaſts, inſects nor vegetables, and where nothing is to be ſeen but hills of ſand; the Camel travels, poſting forward without requiring either drink or paſture; and often endures a total want of ſuſtenance for ſix or ſeven days ſucceſſively. It's feet, which are well adapted for travelling on ſands, are utterly unfit for moiſt or marſhy places: and accordingly the inhabitants of thoſe ſultry regions where it is bred find a valuable ſlave in this animal, where no other could ſubſiſt; and, by it's aſſiſtance, croſs thoſe deſarts with ſecurity, which would be impaſſable by any other known method.

An animal thus formed for a ſandy and deſart region cannot be propagated in one of a different nature. Many efforts have been made to generate Camels in Spain and America, but they have not multiplied in either of theſe countries: they are, indeed, ſometimes introduced into them, and found prolific; but the care of keeping them is ſo great, and the accidents to which they are expoſed from the variableneſs of the climate ſo numerous, that they never repay their neceſſary trouble and expence: in a few years, they are obſerved to degenerate; their ſtrength and patience forſake them; and, inſtead of conſtituting the riches, they become the burden of their owners.

The caſe, however, is very different in Arabia, and thoſe other countries where the Camel is employed for the moſt beneficial purpoſes. It is there regarded in a ſacred light, and as an animal without whoſe help the natives could neither ſubſiſt, traffic, nor travel: it's milk conſtitutes a part of their nouriſhment; they feed on it's fleſh; they cloath themſelves with it's hair; and, in caſe of invaſion, it ſerves to accelerate their flight, being ſometimes known to travel upwards of a hundred miles in a ſingle day. By means of the Camel, an Arabian finds ſafety in his inhoſpitable deſarts; and all the armies on earth might be loſt in purſuit of a flying ſquadron of this country, mounted on Camels, and taking refuge in ſolitudes where nothing interpoſes to impede their flight, or to force them to face their invaders. Thus, where nature preſents only objects of danger and ſterility, the Arabian finds protection, food, and liberty: in the midſt of his ſolitudes, he lives independent and tranquil; and, inſtead of conſidering the waſtes ſpread around him as a reſtraint on his happineſs, he

He is taught by experience to regard them as the munitions of freedom.

The Camel (being a very docile animal) is eaſily inſtructed in the methods of taking up and ſupporting it's burden. It's legs are bent under it's belly a few days after it is produced; and in this manner it is loaded and taught to riſe, the burden being every day increaſed by inſenſible degrees, till the animal is capable of ſupporting a weight adequate to it's ſtrength. The ſame care is taken to render it patient of hunger and thirſt: while other animals receive their food at ſtated times, the Camel is reſtrained for ſeveral days together; and theſe intervals of famine are increaſed in proportion as the creature ſeems capable of ſupporting them. By this mode of education, it lives five or ſix days without food or water: and indeed it's ſtomach is admirably fitted by nature for long abſtinence; for, beſides the four ſtomachs which all animals chewing the cud poſſeſs, the Camel has a fifth, which ſerves as a reſervoir to contain a greater quantity of water than the animal has immediate occaſion for, where it remains without either being corrupted or adulterated by the other aliments. When the Camel finds itſelf preſſed with thirſt, it here finds an eaſy reſource for quenching it; and throws up a quantity of this water, by a ſimple contraction of the muſcles, into the other ſtomachs, which ſerves to macerate it's dry food. In this manner, as it drinks but ſeldom, it takes in a large quantity at a time; and travellers, when parched with thirſt, have often diſpatched this uſeful animal for the ſake of the fluid it was expected to contain.

In Turkey, Perſia, Arabia, Barbary, and Egypt, the whole commerce of the natives is carried on by means of Camels; and no carriage is more ſpeedy, nor can any be leſs expenſive. Merchants and travellers unite themſelves into a body, furniſhed with Camels, to ſecure themſelves from the inſults of thoſe robbers who infeſt the countries through which they are to paſs. This aſſemblage is called a caravan, in which the number of itinerants ſometimes amounts to upwards of ten thouſand, and that of Camels to a ſtill greater number. Each of theſe animals is loaded according to it's ſtrength; and ſo ſenſible is the Camel of it's own ability, that, if overburdened, it remains on it's belly, and refuſes to riſe till it's load is apportioned to it's powers. In general, a large Camel is capable of carrying a thouſand weight, and ſometimes twelve hundred; while the dromedary is ſufficiently loaded with ſix or ſeven. During theſe trading journies they travel but ſlowly; and their ſtages, which are generally regulated, amount to about thirty or thirty-five miles a day. Each evening, when they arrive at the place of their deſtination, which is uſually ſome ſpot of verdure where water and ſhrubs abound, the Camels are permitted to feed at large; and on ſuch occaſions they eat as much in one hour as is fully ſufficient to ſupport them the ſucceeding twenty-four. They prefer the coarſeſt weeds to the ſofteſt paſtures; the thiſtle, the nettle, the caſia, and other prickly vegetables, are their favourite food: but, as all natural ſupplies of proviſions are accidental during theſe expeditions, their drivers take care to ſupply them with a kind of paſte compoſition, which ſerves as a permanent nouriſhment. As theſe animals are accuſtomed to the ſame tracts, they are ſaid to know their way with preciſion, and to purſue their journey when their guides are utterly aſtray; and when they come within a few miles of their uſual baiting-place, they ſagaciouſly ſcent it, increaſe their ſpeed, and often trot with additional vivacity to the end of their ſtage.

Buffon ſeems to conſider the Camel as the moſt domeſticated of all animals, and to have moſt marks of the tyranny of man imprinted on it's form. He is of opinion that this creature is not now to be found in a ſtate of nature; and that the hump on it's back, the calloſities on it's breaſt and legs, and even the great reſervoir for water, are all marks of long ſervitude and domeſtic conſtraint. Theſe deformities he ſuppoſes to be perpetuated by generation; and that what at firſt was the effect of accident, by degrees became natural. However this may be, it is certain that the hump on the back of the Camel grows large in proportion as it is well fed; and that, if anatomized, it will be found compoſed of a ſubſtance not diſſimilar to the udder of a cow.

Nine out of ten male Camels are uſually caſtrated; and though this operation may ſomewhat enfeeble them, it adds to their patience and docility. The female receives the male in a recumbent poſture; ſhe goes with young about a year; and, like all other large animals, produces but one at a time. The milk of the Camel is both abundant and nutritive; and, mixed with water, makes a principal part of the beverage of the Arabians. Theſe animals begin to engender when about the age of three years, and commonly live to forty or fifty. The genital parts of the male reſemble thoſe of the bull, but are placed pointing backwards; ſo that it's urine ſeems to be ejected in the ſame manner as that of the female: and this, as well as the dung, and indeed almoſt every part of this ani-mal, is converted to ſome beneficial purpoſe. Of the urine, ſal ammoniac is made; and of the dung, litter for horſes, and fire for culinary uſes. Thus this animal alone ſeems to comprize within itſelf a variety of qualities, any one of which ſerves to render other quadrupeds abſolutely neceſſary for the welfare of man. Like the elephant, it is tractable and tame; like the horſe, it gives it's rider ſecurity; carries greater burdens than the ox or the mule; and furniſhes milk in as great abundance as the cow. The fleſh of the young ones is ſuppoſed to be as delicate as veal; the hair is more beautiful, as well as more in requeſt, than wool; and even it's very excrements are applied to uſeful purpoſes.

The Camel has a ſmall head, ſhort ears, and a long neck, ſlender and bending. It's height to the top of the bunch is about ſix feet ſix inches; the colour of the hair on the protuberances is duſky, and that on the other parts is a reddiſh aſh. It has a long tail, ſmall hoofs, and flat feet divided above, but not quite through. On the legs it has ſix calloſities; one on each knee, another on the inſide of each fore-leg on the uppermoſt joint, one on the inſide of the hind-leg at the bottom of the thigh, and another on the lower part of the breaſt.

There are ſeveral varieties of Camels: the largeſt and ſtrongeſt is called the Turkman; the Arabian is hardy; and what is called the dromedary, maihary, and raguahl, is very ſwift. The common ſort travel about thirty miles a day. Thoſe which have ſmaller hunches, a more delicate ſhape, and are of an inferior ſize, are uſed ſolely for the purpoſe of riding, and never carry burdens; ſome of which, as has been previouſly obſerved, are capable of travelling an hundred miles a day. The Camels of Africa are well adapted to that parched and unpropitious climate by the extreme hardineſs

of their nature; and are capable of performing journies from Numidia to Ethiopia, over burning deſarts, where no other animals could long exiſt.

Camel, Arabian. The hair of this ſpecies is curled, and longer than that on other animals of this kind, except on the bunch; and the hair on the back is different from that on the other parts, being grey and coarſe, and greatly reſembling that on a horſe's tail.

Camel, Bactrian. This animal has two bunches on it's back; but, in all other reſpects, it reſembles the former varieties, and is equally adapted either for riding or carrying loads.

The two-bunched Camel is ſtill found wild in the deſarts of the temperate parts of Aſia; particularly in thoſe between China and India; and theſe are more large and generous than the domeſticated race.

The Bactrian Camel, as it is called, is very common in Aſia, and is much uſed among the Tartars and Mongols as a beaſt of burden.

Camel, Chinese. This variety is remarkable for it's fleetneſs, and is therefore called by the expreſſive name of Fong Kyo Fo, or Camels with feet of the wind. It has two bunches, covered with long hair; the neck is ſhort and thick; and the hair is thick, and as long as that of goats, being ſometimes of a browniſh yellow colour, and at others reddiſh, with an admixture of black.

This ſpecies of Camel being an exotic, is very rare in Arabia; and is accordingly in the poſſeſſion only of men of opulence.

Camel, Llama. This animal, which may be conſidered as the Camel of the new world, is conſiderably ſmaller than that of the old. It ſtands high on it's legs, has a very long bending neck, a ſmall head, fine black eyes; and, like the Camel, is mild, gentle, patient, and tractable. It's height is about four feet; and it's length, from the neck to the tail, is about ſix. Some of them are white, and others black; but they are in general brown.

According to the editor of Byron's Voyage, the ſhape of the Llama exactly reſembles that of a Camel, except that it wants the bunch on it's back. It is the moſt uſeful animal of Peru and Chili, and was the only beaſt of burden known to the Indians previous to the arrival of the Spaniards. Before the introduction of mules, they were uſed by the Indians in plowing their lands; and at preſent they are employed in carrying burdens not exceeding an hundred weight. They move with a gravity not badly expreſſive of the diſpoſition of their Spaniſh maſters; and, like them, cannot be prevailed on to alter their pace. They lie down in order to be loaded; and, when weary, no blows can provoke them to proceed. Feuillée ſays, they are ſo capricious, that if their drivers ſtrike them, they immediately ſquat down, and nothing but careſſes can induce them to riſe. Between the breaſt and the belly of this animal there is a kind of bunch, from which a kind of matter frequently oozes.

This animal is more temperate than even the Camel of the old world; and, of all other creatures, ſeems to have the leaſt occaſion for water, nature having ſupplied it with ſuch large quantities of ſaliva, that it ſpits on every occaſion; and this ſaliva ſeems to be the only offenſive weapon with which this harmleſs creature is furniſhed, and by which it can expreſs it's reſentment. When offended, it falls on it's belly, and pours out againſt it's adverſary a quantity of this fluid, which, if it comes in contact with the ſkin, immediately occaſions an irritation, and a reddiſh ſpot.

The fleſh of the Llama Camel is proper for food, being eſteemed equal to mutton; but it's wool has a ſtrong, diſagreeable ſcent. It is extremely ſure-footed; and is therefore peculiarly ſerviceable in tranſporting the Peruvian ores over the moſt rugged hills and narroweſt paths of the Andes.

Theſe animals inhabit that vaſt chain of mountains which extend to the Straits of Magellan; but, except where thoſe hills approach the ſea, they are never found on the coaſt. In a wild ſtate, they aſſemble in great numbers in the higheſt and ſteepeſt parts of the hills; and, while feeding, one of them ſtands as centinel on the pinnacle of ſome rock; but, on the approach of any perſon, the animal neighs, and the herd takes the alarm, and runs off with incredible ſpeed. No dogs are fleet enough to overtake them; and they can only be deſtroyed by means of fire-arms.

As every domeſtic animal has had it's origin in a wild ſtate, it is extremely probable that the Llama, and another American animal called the guanaco, are the ſame. The Llama is deſcribed as the largeſt of the two animals the Peruvians have; for, except that, they know no other than the congenerous pacos. Two animals ſimilar to thoſe are found wild: the larger, or guanaco, may be ſuppoſed to be a ſavage Llama; and the leſſer, or vicunna, to be the pacos in a ſtate of nature; the brief deſcriptions procured of each leaving little room to doubt that the difference of colour and hair ariſes only from culture.

Camel, Pacos. This animal is covered with long and very fine wool of a dull purple colour, and has a white belly; but, in a domeſtic ſtate, the colour varies. It's ſhape ſomewhat reſembles that of the llama, but it is conſiderably leſs. It is of the ſame nature with that animal, and inhabits the ſame places; but is more capable of ſupporting the rigours of froſt and ſnow. Theſe creatures herd together in vaſt numbers; they are very timid, and exceſſively ſwift; and ſometimes the guanacos aſſociate with them.

The Indians take the Pacos in a very ſingular manner. They tie cords, having bits of wool or cloth hanging to them, about three or four feet from the ground, acroſs the narrow paſſes of the mountains, and then drive the animals towards them, which are ſo terrified by the flutter of the rags, that they dare not attempt to paſs, but, huddling together, give the hunters an opportunity of killing with their ſl ngs as many of them as they pleaſe.

The Pacos yields bezoar ſtones; and Wafer informs us, that he has taken thirteen out of the ſtomach of a ſingle animal; that they were ragged and multiform, ſome round, ſome oval, and others long; and that their colour was at firſt green, but afterwards changed to cinereous.

CAMELEON. A little animal of the lizard ſpecies, having a ſhort round incurvated tail, and two or three toes joined together; which has long amuſed the ignorant, and furniſhed matter of ſpeculation to the philoſopher.

This little animal, like the crocodile, proceeds from an egg; and alſo nearly reſembles that formidable creature in it's form, but eſſentially differs from it in it's magnitude and appetites. It is ſeldom above eleven inches in length; and generally ſits on the branches of trees, being afraid of ſerpents, from which it is unable to eſcape when on the ground. The head of a large Cameleon is almoſt

moſt two inches long, and from thence to the beginning of the tail four and a half; the tail is five inches long; and the feet two and a half. The thickneſs of the body is various at different times; for ſometimes, from the back to the belly, it is two inches, and ſometimes but one, it being poſſeſſed of a power of inflating and contracting itſelf at pleaſure; and this inflation and contraction not only extends to the back and belly, but alſo to the legs and tail. Theſe tumefactions, however, do not proceed from a dilatation of the breaſt in breathing, which riſes and falls by turns, but are very irregular, and ſeem merely adopted from caprice. The Cameleon often appears blown up, as it were, for two hours together; after which it inſenſibly grows leſs and leſs, the expanſion being always quicker and more perceptible than the contraction. In the contracted ſtate, the animal appears extremely lean; the ſpine of the back ſeems ſharp; all the ribs may be numbered; and the tendons of the arms and legs may be ſeen very diſtinctly. This method of inflating itſelf is ſimilar to that in pigeons, whoſe crops are ſometimes greatly diſtended with air. The Cameleon poſſeſſes the faculty of driving the air it breathes over every part of it's body; but it only gets between the ſkin and the muſcles, for the latter are never ſwollen. The ſkin is very cold to the touch; and though the animal appears to be very lean, it is impoſſible to feel the pulſations of the heart. The ſurface of the ſkin is unequal, and has a grain not unlike ſhagreen, but very ſoft, each eminence being as ſmooth as if poliſhed. Some of theſe protuberances on the arms, legs, belly, and tail, are as large as the head of a pin: but, on the ſhoulders and head, they are of an oval figure, and ſomewhat larger; and thoſe under the throat are ranged, in the form of a chaplet, from the lower lip to the breaſt. When the Cameleon is at reſt in a ſhady place, the colour of all theſe eminences is a blueiſh grey, and the ſpaces between them are of a pale red and yellow.

But the moſt aſtoniſhing circumſtance relative to the hiſtory of this animal takes place when it is expoſed to the beams of the ſun. At firſt, it appears to ſuffer no change of colour, it's greyiſh ſpots ſtill continuing the ſame; but the whole ſurface ſoon appears to imbibe the rays of light; and the ſimple colouring of the body changes into a variety of beautiful hues. Wherever the light falls on the body, it is of a tawny brown; but that part of the ſkin on which the ſun does not ſhine changes into ſeveral brighter colours, ſuch as pale yellow, or vivid crimſon, which form ſpots of half the ſize of a finger, ſome of them deſcending from the ſpine half way down the back, and others appearing on the ſides, arms, and tail. When the ſun ceaſes to ſhine, the original grey colour returns by degrees, and covers all the body. Sometimes the animal becomes all over ſpotted with brown of a greeniſh caſt; and, when wrapped up in a white linen cloth for two or three minutes, the natural colour becomes much lighter, but not entirely white, as has been pretended by ſome naturaliſts: however, from hence we muſt not conclude that the Cameleon aſſumes the colours of the objects it approaches; this being an error which probably originated from the continual changes it appears to undergo.

An ample deſcription of the Cameleon is given by Le Bruyn in his Voyage to the Levant. During his abode at Smyrna, he bought ſeveral of them; and, in order to try how long they would live, kept four of them in a cage, permitting them at times to range the houſe. The freſh ſea-breeze ſeemed to give them great ſpirit and vivacity, and they opened their mouths to admit it; but he never ſaw any of them eat, except now and then a fly, in ſwallowing of which the creature employed not leſs than half an hour. He obſerved that their colour changed three or four times ſucceſſively, but without being able to aſſign any cauſe for ſuch alteration: their common hue he found to be grey, or rather a pale mouſe; but it's moſt frequent change was into a beautiful green ſpotted with yellow. Sometimes alſo the animals were marked all over with dark brown; and this often changed into a lighter hue: ſome colours, however, they never aſſumed, and that of red he found to be among the number. Notwithſtanding his utmoſt care, our traveller was unable to preſerve any one of theſe animals alive above five months, and ſome of them died in four.

When the Cameleon changes it's place, and attempts to deſcend from an eminence, it moves with the utmoſt precaution, advancing one leg very deliberately before the other, but ſtill ſecuring itſelf by holding whatever it can graſp by means of it's tail. It ſeldom opens it's mouth, except for freſh air; and, when that is ſupplied, it diſcovers great ſatisfaction by it's motions, and the frequent changes of it's colour. The tongue, which is as long as the whole body, is ſometimes darted out after flies, the creature's uſual food. The eyes, though they project from the head, are remarkably ſmall; and they have a ſingle eye-lid, like a cap, with a hole in the middle, through which the ſight appears, of a ſhining brown colour, and round it there is a little circle of a golden hue. But the moſt extraordinary circumſtance in the conformation of the eyes is, that the animal often moves the one, while the other is entirely at reſt; nay, ſometimes one eye will ſeem to look directly forward while the other looks ſideways; and one will look upwards while the other regards the earth.

Naturaliſts are not agreed either as to the manner or reaſon of the Cameleon's change of colour. Seneca, and ſome others, aſſert, that it is effected by ſuffuſion; Salinus and others, by reflection; and the Carteſians, by the different diſpoſition of the parts compoſing the ſkin, which give a different modification to the rays of light. Kircher aſcribes the change of colour in the Cameleon to the power of imagination in the animal, becauſe it loſes it when dead. Others, and particularly Dr. Goddard, aſcribe the change to the grains of the ſkin; which, in their various poſtures, he thinks may exhibit ſeveral colours; and, when the creature is in full vigour, may have, as he terms it, rationem ſpeculi; that is, the effect of mirrors; and reflect the colours of adjacent bodies.

As the Cameleon poſſeſſes the faculty of filling it's ſkin more or leſs, it is not only capable of altering the tone and texture of the fibres, on which the reflective quality in a great meaſure depends, but alſo of bringing parts into view which before lay concealed, or of concealing ſuch as before lay open: and it is highly probable that the parts which are in general covered, are of a ſomewhat different colour from thoſe conſtantly expoſed to the action of the air.

On the above principles, perhaps, all the phenomena in the Cameleon's colour may be ſolved. The animal, it is evident, poſſeſſes the power of reflecting different-coloured rays from the ſame parts;

parts; and alſo of making certain parts reflect, and of preventing others from reflecting; and hence that variation, that medley of colours.

The Cameleon, however, is not the only animal poſſeſſed of the property of changing it's colour. Grew mentions a ſort of lizard, which, when ſwelled with rage, changes it's colour from green to a kind of ruſſet: and a ſimilar account is given of the naque mouſche, an inſect peculiar to the iſland of Nevis, in the Weſt Indies; ſeveral varieties of which curious animal are deſcribed by naturaliſts.

Cameleon, Mexican. This animal is of a very ſingular ſhape, the back being crooked, and the body thick. The head is adorned with a creſt, or triangular bony crown, bordered with ſmall tubercles like ſo many pearls, ſome of which alſo appear on the noſe and forehead. The breaſt, as well as all the under parts of the body, ſeem to be beſet with a kind of ſerrated teeth, reaching as far as the tail, which is curled at the extremity. The back and belly are of a dark aſh-colour; but the ſides are of a pale yellow aſh, and covered with ſmall round reddiſh ſcales. The female generally carries her tail turned upwards like a pug-dog; but that of the male is leſs curled.

Cameleon, Amboyna. The tail of this ſpecies is turned upwards. It has a ſort of crown on it's head quite different from that of the former, reſembling a kind of capuchin: this crown is pretty flat, and covered with ſcales which have the appearance of pearls, as well as the throat and the reſt of the body; but in theſe parts they are much ſmaller. The eyes are pretty large, and ſurrounded with a ring; the ſpine of the back and the tail are arched and round; and the vertebræ may eaſily be perceived. The body is covered with ſmall ſcales of a browniſh aſh-colour; but thoſe on the head, legs, and tail, are ſomewhat lighter.

Cameleon, Ceylonese. This ſpecies is of a ſaffron-colour; and all the ſcales riſe like pearls, which, on the upper part, are pretty reſplendent. The creſt or crown is covered with large convex ſcales, very curiouſly bordered with round buttons; the ſnout is very large and blunt; the throat is alſo large; and the tongue, which is long, is thruſt out a great way. The under part of the body, from the lower jaw to the vent, is full of ſmall teeth or prickles, formed like a ſaw. Like the ant-eater, it ſubſiſts on ants, which affix themſelves to it's tongue when thruſt out.

Cameleon, African. This animal is blackiſh, but the teeth or prickles on the back are whitiſh. It is the largeſt of the kind. It's tongue, when protruded, reſembles that of a neat turned upſide down, being flat and rough beneath. The prickles are extremely white, and ſurrounded with a blackiſh ſtreak. The upper part of the body, the head, and the tail, are painted with a bright aſh-colour of a flamiform appearance; the legs are long and ſlender; and the feet, which are thick, conſiſt of five toes, at the ends of which are ſmall ſharp crooked claws.

Cameleon of the Cape of Good Hope. This creature is mottled with white and blue, and the greateſt part of the tail is of a bright aſh-colour. The creſt is flat, oblong, and dentated at the edges, extending from the point of the ſnout to the neck, where it is folded like the collar of a coat. It is ſaid to aſſume the colours which are neareſt it; appearing blue, yellow, and green, alternately.

Camelita. Another appellation for the biſon.

Camelopard. A ſingular kind of animal, which ſeems properly to belong to no known claſs of quadrupeds, but to be perfectly ſui generis. It is called camelopardalis by Latiniſts, and giraffa and zurnapa by oriental nations. Linnæus makes it a ſpecies of the cervus, or ſtag kind, with ſimple horns and very long fore legs; and Pennant makes it a ſpecies of goat.

It is not eaſy to form an adequate idea of the ſize of this creature, and the oddity of it's figure. It ſomewhat exhibits the ſlender ſhape of the deer, or the camel; but is deſtitute both of their ſymmetry and eaſy power of motion. The head bears ſome reſemblance to that of the deer, having two round horns about ſix inches long, and which it probably ſheds every year. It's neck reſembles that of a horſe; and it's legs and feet thoſe of a deer, but with this extraordinary difference, that the fore parts are near twice as long as the hinder. As this creature has ſometimes been found eighteen feet in height, and ten from the ground to the top of the ſhoulders; ſo, allowing three feet for the depth of the body, ſeven feet remain, which is a height ſufficient to admit a man mounted on a middle-ſized horſe. The hinder part, however, is much lower; ſo that when the animal is in a ſtanding poſture, it has ſomewhat the appearance of a dog ſitting; and this peculiar formation of it's legs gives it an aukward and laborious motion, which, though ſwift, muſt nevertheleſs be tireſome. For this reaſon, the Camelopard is very rarely found, and only finds refuge in the moſt internal deſarts of Africa. The dimenſions of a young one, as they were accurately taken by a perſon who examined it's ſkin, which was brought from the Cape of Good Hope, were found to be as follow: the length of the head was one foot eight inches; the height of the fore-leg, from the ground to the top of the ſhoulder, was ten feet; from the ſhoulder to the top of the head, ſeven; that of the hind-leg was eight feet five inches; and, from the top of the ſhoulder to the inſertion of the tail, it was exactly ſeven feet long.

No animal, either from it's diſpoſition or formation, ſeems leſs fitted for a ſtate of natural hoſtility than the Camelopard. It's horns are blunt, and even knobbed at the ends; it's teeth are entirely formed for vegetable paſture; it's ſkin is beautifully ſpeckled with white ſpots on a browniſh ground; it is timid and harmleſs; and, notwithſtanding it's vaſt ſize, rather flies from than reſiſts the moſt inſignificant enemy. It greatly partakes of the nature of the camel, which it likewiſe nearly reſembles. It lives entirely on vegetables; and, when grazing, is obliged to ſpread it's fore-legs very wide, in order to reach it's paſture. It's motion is a kind of gallop, two legs on each ſide moving at the ſame time; whereas, in other animals, they move tranſverſely. It often lies down on it's belly; and, like the camel, has a callous ſubſtance on it's breaſt, which, when repoſing, defends it from injury.

This animal was known to the ancients, but has very rarely been ſeen in Europe. When ancient Rome was in it's ſplendour, Pompey exhibited no leſs than ten of them at once on the theatre. It was a barbarous pleaſure peculiar to the people of thoſe times to ſee the moſt ferocious, as well as moſt extraordinary animals, produced in combat againſt each other: the lion, the lynx, the tyger,

the elephant, and the hippppotamos, were all let looſe promiſcuouſly, and inflicted indiſcriminate deſtruction.

The laſt Camelopard recorded to have been ſeen in Europe, was ſent from the Eaſt to the Emperor of Germany, in 1559: however, theſe animals have often been ſeen tame at Grand Cairo in Egypt, though the race is far from being numerous.

The Greeks called this animal Camelopardalis; becauſe, as they ſuppoſed, it was generated between a camel and a leopard.

CAMURI. A ſea-fiſh of the lupus or baſſe kind, common in the ſeas and larger rivers of America. It grows to about two feet in length, and one foot in thickneſs. The head is monſtrouſly large, and the mouth extremely wide. It has a large ſtrong fin on it's back, armed with ſharp prickles; and a furrow in the back behind it, into which the fiſh can occaſionally lay it down. It's ſides are yellowiſh; it's belly is white; it's fins are of a browniſh yellow-colour; and it's ſide-lines, which run from the gills to the tail, are broad, and of a fine black.

CANALIS. See TUBULUS MARINUS.

CANARY BIRD. This bird, which is of the ſize of a titmouſe, has a ſhort bill, thick at the baſe, and of a whitiſh colour. It has now become ſo common, and continued ſo long in a domeſtic ſtate, that it's native habits, as well as it's native country, ſeem almoſt forgotten. Though, from the name, it appears that theſe birds came originally from the Canary Iſlands, we now have them from Germany only, where they are bred in great abundance, and exported to different parts of Europe. At what period they were introduced into this quarter of the world, is not well aſcertained; but it is certain that, about a century ago, they were ſold at very high prices, and kept only for the amuſement of the great: they have, however, ſince multiplied in great abundance; and their prices have diminiſhed in proportion to their numbers. In their native iſlands, a region equally celebrated for the beauty of it's landſcapes and the harmony of it's groves, the Canary Birds are of a duſky grey-colour, and ſo very different from thoſe uſually ſeen in Europe, that ſome naturaliſts have even doubted whether they are of the ſame ſpecies. With us, they have that variety of colouring common to all domeſtic fowls; ſome being white, others mottled, and ſome beautifully ſhaded with green: but they are more eſteemed for their notes than their beauty, having high, piercing pipes, as indeed all thoſe of the finch tribe have, continuing for ſome time in one breath without intermiſſion, then raiſing it higher and higher by degrees, with great variety of execution. This quality has rendered the Canary Bird, next to the nightingale, the moſt celebrated ſongſter; and as it is more eaſily reared than any of the ſoft-billed birds, and continues it's ſong throughout the year, it is the moſt common tenant of our rooms. Rules have been laid down, and copious inſtructions given, for breeding theſe birds in a domeſtic ſtate; which, as they partly elucidate their natural hiſtory, are here ſubjoined.

In chuſing Canary Birds, thoſe are preferable which appear with life and boldneſs, ſtanding upright on their perches, like ſparrow-hawks, and not apt to be frightened at every noiſe. If their eyes look chearful and bright, it is a ſign of health; but, on the contrary, if they hide their heads under their wings, and gather up their bodies, theſe are ſymptoms of their being diſordered. The melody of the ſong ſhould alſo be regarded in making a ſelection; for ſome will open with the notes of the nightingale, and, after running through a variety of modulations, end like the tit-lark; others, again, will begin like the ſky-lark, and, by ſoft melodious turns, fall into the notes of the nightingale. There are leſſons taught this bird in it's domeſtic ſtate, and generally borrowed from others; but it's native note is loud, ſhrill, and extremely piercing.

Canary Birds ſometimes breed all the year round; but they moſt uſually begin to pair in April, and to breed in June and Auguſt; and thoſe are ſaid to be the beſt breeders which are produced between the Engliſh and the French.

Towards the end of March, a cock and a hen ſhould be put together in a ſmall cage, where they will betray ſigns of animoſity at firſt, but will ſoon become perfectly reconciled. The room where they are kept to breed ſhould be ſo ſituated as to let the birds enjoy the morning ſun; and the windows ſhould be conſtructed of wire rather than glaſs, that the air may have free acceſs. The floor of the room ſhould be kept clean; and ſometimes dry gravel, or ſifted ſand, ſhould be ſprinkled over it. In the cage likewiſe ſhould be two windows, one at each end; and ſeveral perches, at proper diſtances, for the birds to ſettle on, as they fly backwards and forwards. A tree in the middle of the room would be moſt convenient to divert the birds, and would ſometimes ſerve for the purpoſe of building their neſts.

In Germany, where the breeding of theſe ſongſters forms the occupation of numbers, they build a large room in the manner of a barn, with a ſquare place at each end, and ſeveral apertures to theſe apartments. In theſe they plant ſeveral ſorts of trees, in which the birds take great delight to ſing and breed. The bottom of the place they ſtrew with ſand; and on it ſtrew rape-ſeed, chickweed, and groundſel, on which the old birds feed while breeding. In the body of the houſe they place all ſorts of ſtuff fit for building the neſts; and brooms, one under the other, in all the corners, for the birds to build in. Theſe they ſeparate by partitions from each other, to prevent thoſe above flying down on, or otherwiſe incommoding, thoſe which breed below. The light is alſo excluded, no bird being fond of it too full on it's neſt.

With us, however, the apparatus is much leſs expenſive; a breeding-cage often ſuffices; and, at moſt, a ſmall room without any particular preparation. While the birds are pairing, it is uſual to feed them with ſoft meat; that is, bread, mawſeed, a little ſcalded rape-ſeed, and about the third part of an egg. The apartment ſhould be furniſhed with ſtuff proper for conſtructing the neſts, ſuch as fine hay, wool, cotton, and hair. Theſe materials ſhould be perfectly dry, and then mixed and tied together in ſuch a manner that the birds may eaſily pull out what they want. This ſhould be hung in a proper part of the room; and the male will be found to take his turn in building the neſt, ſitting on the eggs, and feeding the young. They are generally two or three days in compleating their neſts; the hen commonly lays five eggs, and in the ſpace of fourteen days the young are excluded. So prolific are theſe birds, that the female will ſometimes be ready to hatch a ſecond brood before the firſt are able to quit the neſt. On ſuch occaſions, ſhe leaves the neſt and the young, in order to pro-

vide another habitation for her new brood. In the mean time, the male, more faithful to the duties of his truſt, breeds up the offspring left behind, and fits them for a ſtate of independence.

When the young are excluded, the old ones ſhould be ſupplied with a ſufficiency of ſoft food every day; and likewiſe with freſh greens, ſuch as cabbage, lettuce, and chickweed; in June with ſhepherd's purſe, and in July and Auguſt with plantain. They ought never to have groundſel after the young are removed. With ſuch delicacies the old ones will be ſedulous in feeding their young brood, who, when arrived at a ſufficient age, feed themſelves, and are put into cages. Their meat then is the yolk of an egg boiled hard, with an equal quantity of fine bread, and a little ſcalded rape-ſeed, which muſt be bruiſed all together till they become fine, and then mixed with a little maw-ſeed; after which, all may be blended in a maſs, and the birds ſupplied with a freſh quantity daily.

Canary Birds are apt to be diſordered either through colds, or by feeding too much on vegetables unmixed with ſeed. This may be diſcovered by blowing up their belly-feathers; for if their bellies be ſwelled, tranſparent, and full of red veins, with the bowels ſunk down to the extreme parts of their bodies, they are certain ſigns of indiſpoſition. When theſe parts appear black, their complaints frequently prove mortal: in ſuch caſes, however, the birds muſt be kept warm; and oatmeal ſhould be mixed among their ſeed for three or four days, with liquoriee in their water; but if the habit of the birds be too lax, maw and bruiſed hempſeed ſhould be given them, with ſaffron in their water; or milk and bread, with a little maw-ſeed intermixed.

Another diſtemper which frequently affects Canary Birds, is a little pimple in the rump called the pip: this will generally vaniſh of itſelf; but when it does not, it ſhould be pricked when ripe, for the purpoſe of diſcharging the matter lodged in it; after which, a bit of loaf-ſugar, moiſtened in the mouth, ſhould be applied to the ſore.

A third diſeaſe incident to Canary Birds conſiſts of a ſort of yellow ſcab about the head and eyes, which ſometimes ſwells, and is filled with matter. In ſuch diſtemper, the part affected ſhould be anointed with freſh butter, lard, or oil of ſweet almonds; either of which will effect a cure.

The moulting-time may be known by the birds appearing rough, melancholy and ſleepy, and often putting their heads under their wings; beſides which ſymptoms, the bottoms of their cages will be covered with down, or ſmall feathers. At this time they ſhould be kept warm, and placed in the ſun, in fine bright weather. Their food ſhould conſiſt of Naples biſcuit, bread, and egg, mixed together, with ſaffron in their water; and alſo bruiſed hempſeed mixed with lettuce and maw-ſeed. If the ſeaſon be very hot, the birds ſhould have liquorice inſtead of ſaffron; and their food ſhould be plantain and lettuce-ſeed.

The Canary Bird, when kept in company with the linnet or goldfinch, pairs, and produces a mixed breed, but more like the Canary Bird, and reſembling it principally in it's ſong. Indeed, all this tribe, with ſtrong bills and piercing notes, and feeding on grain, have the ſtrongeſt ſimilitude to each other; and may juſtly be ſuppoſed, as Buffon imagines, to come from the ſame original. They all breed about the ſame time; they frequent the ſame vegetables; they build in the ſame hedges and trees; and are brought up for the cage with the ſame food and precautions. The linnet, the bullfinch, and the goldfinch, when once we know the hiſtory of the Canary Bird, have few peculiarities which can either attract our curioſity or require our care. The only art neceſſary to be practiſed towards all thoſe birds which have no natural fine note, is to breed them up under ſome more pleaſing harmoniſts. The goldfinch acquires a more melodious note from the nightingale; and the linnet and the bullfinch may be taught to whiſtle long and regular tunes.

CANAVAY. A Philippine ſea-bird, about the ſize of a pigeon, which lays it's eggs on the naked rocks, where it ſits and hatches them. Some naturaliſts have ſuppoſed this bird to be no other than the common king's fiſher; but this is ſcarcely probable, as we have no accounts of the beauty of it's colours, which being ſo very remarkable in that claſs of birds could hardly have eſcaped obſervation. It is much more probably ſome aquatic bird wholly unknown in this part of the world.

CANCELLUS; in Engliſh, the WRONG HEIR. A very ſmall ſpecies of cray-fiſh, which the French call hermit, or St. Bernard the hermit, becauſe it ſhuns other fiſh, and retires into the firſt ſhell it can find. It's body is ſomewhat long, but in general bears a ſtrong reſemblance to that of a ſpider, except that it is a little thicker. It is found in ſlimy places near rocks, commonly enveloped in a ſhell as big as a nut, of a conic figure, thick, very hard, rugged, furrowed, and externally grey, but internally white and ſmooth. This ſhell is ſo well adapted to the animal, that it is difficult to force it from it's incloſure: ſome, however, waſh, dreſs, and eat it. It contains abundance of volatile ſalts, and acts both as an aperient and diſſolvent. An oil extracted from it is imported from America, and uſed in rheumatic caſes.

In the American iſlands there is found a much larger ſpecies of Cancellus, being three or four inches long. It is called the ſoldier, becauſe it poſſeſſes, and fortifies itſelf in, an extraneous ſhell. As it's natural covering leaves it's hinder parts naked, it employs itſelf, as ſoon as it has acquired ſufficient ſtrength, in ſearching out another proportioned to it's ſize, into which it thruſts it's poſteriors, and adjuſts itſelf; but, when it grows larger, and finds itſelf confined, it is obliged from time to time to go in ſearch of other ſhells. To the curious, it is amuſing enough to obſerve how this animal ſtops at all the ſhells it meets with, in order to conſider them; and, whenever it finds one fit for it's purpoſe, how it quits it's own, and crouds into it's new tenement with precipitation, as if aſhamed of being naked: and if two of theſe creatures are ſtripped at one time, for the purpoſe of entering the ſame ſhell, they fight till the weakeſt is compelled to ſubmit.

The inhabitants of the American coaſts fiſh for them, ſtring them up by their heads, and expoſe them to the ſun, which melts all except their ſolid parts. The diſſolved ſubſtance, or oil, is eſteemed excellent in rheumatiſms, to which the natives are very ſubject.

CANCER. The claſſical name for the crab.

CANCROMA. A genus of birds of the order of grallæ; having gibbous beaks, and their upper mandibles ſhaped like boats turned upwards. Linnæus reckons two ſpecies, the cochlearia, and the

the cancrophaga; the former is found in Guiana, and the latter in the Brazils.

CANDELARIA. A ſpecies of inſect belonging to the genus of fulgora, and the order of hemiptera in the Linnæan ſyſtem.

CANICULA. An appellation uſed by Pliny and other hiſtorians to expreſs the fiſh called lamiola by the Italians. It is the galeus canis of authors; and, in Cornwall, is called the tape. Artedi makes it a ſpecies of ſquallus, with the noſtrils placed near the mouth, and ſmall foramina near the eyes.

The term Canicula is alſo applied by Ariſtotle, (and, ſince him, by Rondeletius, Aldrovandus, and others) to ſignify the catulus.

CANINANA. An American ſerpent, eſteemed one of the moſt inoffenſive kind. It grows to the length of two feet; and is green on the back, and yellow on the belly. It feeds on eggs and ſmall birds. The natives cut off the head and tail, and eat the body as a peculiar delicacy.

CANINUS SERPENS. A name given by ſome naturaliſts to the mauballa of the Ceyloneſe, a ſnake which flies at every object that comes in it's way with the fury of an incenſed dog.

CANIS. In the Linnæan ſyſtem of zoology, a diſtinct and very large genus of animals of the order of feræ, and claſs of mammalia, including all the dog kind; which this celebrated naturaliſt only accounts ſo many varieties and diſtinct ſpecies.

The characters of this genus are; that the ſeveral ſpecies have ſix upper fore-teeth, the lateral ones being longeſt, and the intermediate ones of a lobated figure; that there are alſo ſix fore-teeth in the lower jaw, of which the lateral ones are lobated; that the canine teeth are ſingle and incurvated; and that the grinders are ſix or ſeven in number.

The ſpecies belonging to this genus are: the common dog; the wolf; the hyæna; the fox; the alopex; the lagopus; the jackall, or lupus aureus; the Mexican dog, or American mountain-cat, with the tail bent downwards, and an aſh-coloured body variegated with brown and yellow ſpots; and the thous.

CANIS CARCHARIAS. A name given by Rondeletius, and other authors, to that ſpecies of ſhark called the lamia, or white ſhark; and, by others, carcharias lamia.

CANIS GALEUS. A large fiſh of the ſhark kind. It has three rows of very ſharp teeth; the eyes are diſproportionably ſmall; and the irides are of a fine bright ſilver-colour, with a caſt of blue or green. It is caught on the Corniſh coaſts; and is ſo extremely fond of human fleſh, that it will even venture to leap on ſhore, in order to acquire it.

CANIS VOLANS. An animal of the bat or veſpertilio kind; diſtinguiſhed by Linnæus under the appellation of veſpertilio cauda nulla, the bat without a tail.

CANKER-WORM. See SCHARABÆUS.

CANNEVAROLA. A name given by Aldrovandus, and ſome other naturaliſts, to the leſſer reed-ſparrow; called by others ficedula cannabina; and, by Ray, paſſer arundinaceus minor.

CANOSA. An appellation given by Salvian to the fiſh called by others canis galeus and muſtelus levis.

CANTHARIS. An inſect of the beetle kind, from whence proceed Cantharides, well known in medicine by the name of Spaniſh flies, and for their uſe in bliſters. They have feelers like briſtles; their wings have flexible caſes; their breaſts are pretty plain; and the ſides of their bellies are corrugated.

Cantharides differ from each other in their ſize, ſhape, and colour: the largeſt are about an inch long, and as much in circumference; while others are not above three-quarters of an inch. Some are of a pure azure colour, others of a pure gold, and ſome of a mixture of pure gold and azure: however, they are all very brilliant, and extremely beautiful.

This inſect conſiſts of four parts; namely, the head, the neck or breaſt, the body, and the belly. The head is ſmall in proportion; but the mouth is pretty large; and there are teeth in the jaws, having two ſorts of articulated pincers, with which it graſps it's food, and conveys it to it's mouth. In the forehead there are two eyes of a golden colour, and a little prominent; and under them there are two horns, or feelers, like briſtles, pretty long, and moveable by means of twelve equal articulations, the laſt of which terminates in a point. The top of the head, which riſes in a bump, is extremely ſmooth and poliſhed, and divided into two parts. Inſtead of a chin, there is a beard; and the breaſt is formed of a ſingle plate, behind which there are a kind of lungs; and it is connected below to the firſt pair of feet, which are each compoſed of three parts nearly of the ſame length, of which the laſt has five knotted joints, terminated with two crooked claws. The caſes of the wings are membranaceous; connected to the breaſt; and, as it were, ſhagreened: they are convex above, and hollow beneath; thin, but ſtrong, and covering the upper-part of the body, to which the two laſt pair of feet are connected. The belly conſiſts of ſix large rings, which are ſmooth, and folded at the ſides. The body, properly ſo called, is compoſed of eight moveable rings, furrowed from end to end. The animal is ſeemingly deſtitute of hair; but, if examined with microſcopical minuteneſs, it will be found ſomewhat hairy, eſpecially in the under-part.

The cantharides are bred from worms ſhaped almoſt like real caterpillars. They are chiefly natives of Spain, Italy, and Portugal; but, in the ſummer ſeaſon, are alſo to be met with near Paris on the leaves of the aſh, the poplar, and the roſe; as well as among wheat, and in the meadows. It is very certain that theſe inſects are ſo very fond of aſh-leaves, that they will ſometime ſtrip thoſe trees entirely bare. Some naturaliſts affirm, that they delight in ſweet-ſcented herbs; and it is evident that they are partial to the honeyſuckle, lilac, and wild-cherry ſhrubs; but they are ſaid to poſſeſs a rooted averſion to elder-trees, nut-trees, and wheat.

The country people, it is ſaid, expect the return of theſe inſects every ſeven years; that at thoſe ſeaſons ſuch numbers of them have been ſeen flying in the air, that they appeared like ſwarms of bees; and that their ſmell was ſo very offenſive, as to be perceptible at a conſiderable diſtance, eſpecially about ſun-ſet. This diſagreeable ſcent, however, is a guide to thoſe whoſe buſineſs it is to catch them; and, when caught and dried, they become ſo light, that fifty of them will hardly weigh one drachm.

Thoſe perſons who collect theſe inſects tie them either in a bag, or a piece of linen cloth that has been well worn, and then kill them with the ſteam of hot vinegar; after which they are dried, and kept in boxes. The flies, thus dried, being chymically analized,

analized, yield a conſiderable quantity of volatile cauſtic ſalt, mixed with a little oil, phlegm, and earth.

Cantharides are penetrating and corroſive; and, when applied to the ſkin, raiſe bliſters from which proceed a great deal of ſerous matter. They are uſed both internally and externally: however, they ought to be preſcribed with caution, as their effects fall very violently on the urinary paſſages; and, in many caſes, have proved mortal, either through the wantonneſs or injudiciouſneſs of the preſcriber.

Though ſeveral authors have endeavoured to account for the effects of Cantharides on the human frame, we are ſtill in the dark; for all they have ſaid on the ſubject amounts to no more than this, that they univerſally affect the urinary paſſages, in a manner which may be very ſcientifically deſcribed, but very obſcurely comprehended.

Linnæus takes notice of ten different ſpecies of Cantharides; the firſt of which he calls the female Cantharis without wings, which is uſually found on the juniper-tree. He informs us that, though he has never yet ſeen the male, he does not doubt that there is one, becauſe the female ſhines in the dark; as he thinks, with an intent to diſcover herſelf to the male. This ſeems to be the ſame as the glow-worm; and confirms, in ſome meaſure, what Dale has advanced concerning it.

Cantharis, with a red breaſt and blackiſh caſes to the wings. This ſpecies is very large, being above an inch and a half long, and a quarter of an inch in diameter. It is ſofter to the touch than moſt other inſects of the beetle kind; and has a flattiſh head and back, except under the eyes. The mouth is ſmall and forked; and the feelers are very ſhort and ſmall; but there are others half the length of the body, conſiſting of eleven joints, reddiſh near the baſe, and brown in every other part. The breaſt is depreſſed behind, and cordiform; but the edges are ſomewhat prominent; the whole being of a reddiſh colour, except a black ſpot on the upper part, cloſe to the head. The caſes of the wings are plain, ſmooth, and oblong, but very ſoft and flexible, and of a browniſh-black colour. The body is brown, except the laſt joint, which is reddiſh; a tinge of the ſame colour runs along the ſides, which are compreſſed; and the joints, which are in a manner folded over each other, are covered with a ſort of pimples. This ſpecies of Cantharis is common about houſes in the country, and under hedges.

Cantharis, red-breaſted, with red caſes to the wings. This ſpecies is ſmall. The body is black; and the caſes of the wings, as well as the breaſt, are of a bright elegant red, except that there is a black ſpot on the latter. The feelers are ſlender; the caſes of the wings are ſoft, ſilky, and flexible; and the wings are thin, and of a brown colour. This inſect is not very common.

Cantharis, with black caſes to the wings, marked with two red tranſverſe lines. This inſect is not larger than a louſe. The legs and feelers are black; the head and breaſt are of a greeniſh colour; the caſes of the wings are of a deep gloſſy black, marked with two tranſverſe red ſtreaks, one of which is near the baſe, and the other near the point or extremity; and the ſides of the body are reddiſh. This ſpecies is frequently found in paſture-grounds, and under hedges.

Cantharis, with teſtaceous caſes to the wings, and a red breaſt. This inſect, which is very common, reſembles the laſt ſpecies in every reſpect, except the colour of the caſes of the wings, which are of a pale yellow. The breaſt is deſtitute of ſpots, and the eyes are black.

Cantharis, with black caſes to the wings, and a red breaſt marked with a white ſpot. This ſpecies, which is called the tree-beetle by ſome naturaliſts, is of a blackiſh-brown colour; and the caſes of the wings are ſlender.

Cantharis, with red caſes to the wings, and a red breaſt marked with a black ſpot. This creature is found in various places, and ſometimes among heaps of iron ore. The body is entirely black; the feelers are very ſlender; the caſes of the wings are of a deep red, or ſaffron-colour, ſlightly ſtreaked; but the wings themſelves are brown.

Cantharis, green copper-coloured, with the caſes to the wings externally red. This inſect, which is of a middling ſize, is found on nettles, and ſome other plants. The head, breaſt, feelers, rings of the belly, and the lower part of the caſes of the wings, as well as their interior edges, are of a greeniſh copper colour; but the extreme part of the caſes of the wings, as well as the ſides, are red, and the remainder of a greeniſh copper colour; but the wings are brown.

Cantharis, of a greeniſh copper colour, with red tips to the caſes of the wings. This inſect is ſmall. The wings are of a blackiſh brown; and the feelers are entirely black. The breaſt, head, and caſes of the wings, are of a deep green-colour, inclining to copper, with red or ſaffron-coloured points. The belly is longer than the caſes, and, underneath, of a copper colour; but the wings are internally red. This ſpecies, however, varies with reſpect to the caſes of the wings, which are ſometimes blue, and at others red.

Cantharis, with black caſes to the wings, marked with two red ſtreaks. The head and breaſt of this inſect, which is no larger than a louſe, are green.

Cantharis, with black caſes to the wings, yellow points, and a black breaſt. This ſpecies is likewiſe of the ſize of a louſe; but the head and breaſt are entirely black. The tips of the caſes of the wings are of a yellow ſulphur colour; and the ſides of the belly are of a bright yellow.

Cantharis, brown, with the caſes of the wings yellow at the points, and a red breaſt. This ſpecies is very ſmall. The breaſt is of a ruſty red colour, with a black ſpot; the caſes of the wings, which are brown, ſcarcely reach half way down the belly; the thighs are black; the legs are pale; and the ſegment on the belly is yellow on the edges.

Cantharis, black, with livid caſes to the wings. This is the moſt minute inſect of the kind, and is only found on plants.

CANTHARUS. A ſea-fiſh nearly reſembling the ſparus and ſargus in ſhape, but of a darker colour, and covered with ſmall ſcales, without the annular black ſpots which theſe fiſhes uſually have near their tails. It is common in the Mediterranean ſeas; and is frequently brought to market at Rome, where it is eſteemed a well-taſted fiſh.

The Cantharus of antiquity is called by Artedi the ſilver-eyed ſparus, with longitudinal and parallel yellow lines on each ſide. Gaza gives this fiſh the appellation of ſcharabæus.

CANUTI AVIS. See Tringa.

CAOUANNE. A ſpecies of tortoiſe which bears a ſtrong reſemblance to the jurucua of the Brazilians;

Brazilians; but the ſhell is thicker; and the fleſh ill-flavoured, harſh, tough, and ſtringy.

CAPELAN. A name given by ſome naturaliſts to a ſmall ſpecies of whiting, called by the Venetians matlo; and, by authors, aſellus omnium minimus, and merlangus.

CAPELLA. See LAPWING.

CAPERCALZE. A provincial name for the cock of the wood.

CAPIBARA. Another name for the cabiai, or water-hog.

CAPIDODIUS. An appellation given by Paulus Jovius, and ſome others, to the fiſh called the grampus and orca. According to the Artedian ſyſtem, it is a ſpecies of dolphin; and is diſtinguiſhed by that author under the name of the dolphin with the ſnout bending upwards, and with broad ſerrated teeth.

CAPITO. This river-fiſh, better known by it's Engliſh name, the chub, is alſo called cephalus, ſqualus, and cyprinus; and, in ſome places, the chevin. It is longer-bodied than the carp; it's head is black, large, and ſomewhat flat; it is entirely deſtitute of teeth; it's tail is forked; and all it's fins are of a blueiſh black colour. It generally lodges under the coverts of old ſtumps of trees and hollow banks, and affords much diverſion to the angler. It ſpawns in May, and is in the higheſt perfection in April; but is never eſteemed a very delicate fiſh.

Capito is alſo a name erroneouſly given by ſome authors to the mugil or mullet. Gaza ſeems to have given riſe to this miſtake, by tranſlating the word Cephalus from Ariſtotle by the term Capito, without conſidering that he confounded this fiſh with another.

CAPITO CÆRULEUS. A fiſh common in the Danube and other large rivers of Germany; and frequently called the jentling.

CAPITO RAPAX. The piſcis corvus of ſome naturaliſts; a fiſh ſhaped ſomewhat like the common chub.

CAPO. An appellation given by Paulus Jovius to the fiſh called coccyx by the ancient Greeks, and cuculus by the Romans. It is a ſpecies of the triglæ, diſtinguiſhed by Artedi under the name of the red trigla with a bifid ſnout and ſtriated coverings to the gills.

CAPON. A cock-chicken, caſtrated when young, and generally as ſoon as left by the dam. Capons, beſides their uſe for the table, ſerve to lead chickens, ducklings, turkey-pouts, pea-hens, pheaſants, or partridges, inſtead of their natural dams; over whom they have ſeveral advantages by the largeneſs of their bodies, which will cover thirty or forty young.

CAPONE. A name given by the Italians to the fiſh called hirundo and corvus by authors; and by Artedi conſidered as a ſpecies of the trigla. It is diſtinguiſhed from the reſt of this genus by that author under the name of the trigla with an aculeated head and with three appendages on each ſide of the pectoral fins.

CAPPANUS. An appellation given by ſome authors to the ſea-worm which perforates the bottoms of ſhips, unleſs they are ſheathed with copper.

CAPRA. The claſſical name for the goat.

CAPRICORNUS. See MORDELLA.

CAPRIMULGUS. An anomalous nocturnal bird, not agreeing with any of the rapacious kind, uſually found in the Peak of Derbyſhire, and other mountainous places. In Shropſhire it is called the fern-owl; and, in Yorkſhire, the churn-owl, from the noiſe it makes in flying. It is a very beautiful bird; and, both in ſhape and colour, bears a ſtronger reſemblance to the cuckow than the owl, and is very eaſily diſtinguiſhed from all other birds by the ſtructure of it's feet and wings. From the point of the bill to the extremity of the tail, it meaſures about eleven inches. The head is large in proportion; the bill is extremely ſmall, and a little incurvated; the mouth and throat are very wide; the legs are ſmall, and feathered half way down on the fore-ſide, the feathers depending almoſt to the toes, which are united from the divarication to the firſt joint; and the inner edge of the middle claw is ſerrated, as in herons.

CAPTAIN. A Weſt Indian fiſh, entirely of a red colour; with only one fin on it's back, which is very long when erected, and armed with large prickles: the gill-fins are of the ſame ſhape, by means of which it combats other fiſh. It is pretty much like the carp, being covered with ſcales like that fiſh; but it grows to the length of three feet, and is about thirty inches in circumference.

Theſe fiſh ſwim in ſhoals, and ten or a dozen are commonly entangled in the ſame net. Some of them have been caught of the length of ſix feet, and thick in proportion, covered all over with ſpots twice as large as thoſe of a carp. The fleſh of the Captain is white, and well taſted.

CAPUENA. A fiſh caught among the rocks near the ſhores of the American ſeas. It generally grows to about five inches in length; is of a long, rounded ſhape; and is reckoned very delicious.

CAPWARD. A Brazilian animal, ſo called by the Portugueſe, and deſcribed as an amphibious creature, with a body like a hog, a head like a hare, and without a tail. It almoſt conſtantly reſts on it's poſteriors, like an ape. It lives in the ſea in the day-time; and in the night ſeaſon comes aſhore, for the purpoſe of ravaging gardens. It's fleſh is reckoned wholeſome.

CARABUS. The name of a genus of four-winged flies belonging to the Linnæan order of coleoptera. The antennæ are oblong, ſlender, and ſetaceous; and the thorax is ſomewhat convex, marginated, of a cordated figure, and truncated in the hinder-part.

CARACAL. An animal of the feline kind, ſometimes called the ſyaguſh. It is a native of the Eaſt Indies; and reſembles the lynx in ſize, in ſhape, and even in the ſingularity of being tufted at the ears. The Caracal, however, differs from that animal in the following particulars; that it is not mottled; that it's hair is rougher and ſhorter; that it's tail and muzzle are longer; that it's phyſiognomy is more fierce; and that it's nature is more ſavage.

CARACARA. A Brazilian bird of the genus of the hawk, called by the Portugueſe gavicaou. It is of the ſize of the common kite, and has a tail nine inches long. The head is like that of the hawk; the beak is black, and hooked; the plumage is tawney, with white and yellow ſpecks; and the feet are yellow, with ſemicircular long, ſharp, black talons. This bird is very deſtructive to poultry.

CARANGUE. A Weſt Indian white and flat fiſh, but having, notwithſtanding, the eyes placed on each ſide of the head. It is from two to three feet long, eighteen inches broad, and ſix thick. The back-fins are very unequal; thoſe on the gills

are pointed, and very near the head; and the tail is forked. These fiſh are found in great abundance near the Caribbee Iſlands. Their fleſh is exceedingly good, and even preferable to our trout.

CARAPO. An American freſh-water fiſh, of which there are two ſpecies. The firſt has a long thin body, ſhaped like the blade of a knife; the back is thick; the belly is thin and narrow; the tail is pointed; the head is flat and pointed; and the lower-jaw extends farther than the upper. The mouth is very narrow; the under-jaw is furniſhed with very ſmall ſharp teeth, but there are none in the upper; the eyes are very ſmall; and the body is covered with ſcales. The colour is brown, with a faint admixture of red; the back and head are ſomewhat blackiſh; and a duſky line runs all along the middle of the ſides, under which the fiſh is ſpeckled with black ſpots, each of the bigneſs of a muſtard-ſeed. The uſual ſize of this fiſh is about one foot in length, and two inches in breadth.

The other ſpecies differs very little from the former, except in being narrower in proportion to it's length, and deſtitute of ſpots; and both are reckoned proper for food.

CARAPOPEBA. A ſmall ſpecies of Brazilian lizard, ſuppoſed to be of a poiſonous nature. The body is of a liver-colour, marked with ſeveral white ſpots; the tail is variegated with white and yellow; and the eyes are remarkably bright and vivid.

CARASSIUS. A genus of leather-mouthed fiſhes of the carp or bream kind, of which there are three ſpecies. It is a ſmall freſh-water fiſh, about four or five inches long, with a flatted body, and a prominent back. It very much reſembles the bream in it's ſhape, but is ſomewhat thicker. It is of a pale yellow colour, but that of the belly is ſomewhat deeper than the reſt of the body. The mouth is ſmall and round; and the eyes are alſo ſmall, and ſunk in their orbits.

CARASSOW. An American bird, called by ſome the pheaſant of that continent; by the Creoles, the mountain-bird; and, by others, the leſſer wild turkey. The head and neck are black, reſembling velvet; and there is a high creſt of ruffled black feathers, of a ſemicircular form, with a white ſtreak running through the middle, and parallel to the edges, and which the bird can either erect or depreſs at pleaſure. The reſt of the body, except the lower part of the cock, is black; and that of the hen is of a duſky brown. The tail is alſo black, except four white bars which run acroſs it, near the extremity. The bill is thick in the upper-jaw, where there is a round excreſcence as big as a hazel-nut. The eyes are black; the legs are pretty long; and the ſize of the body is not much leſs than that of a common turkey. The Caraſſow is eaſily tamed; and it's fleſh is eſteemed excellent food.

CARAUNA. A ſmall Brazilian fiſh, in many reſpects approaching to the turdus kind. It's colour is a fine bright red, entirely covered with ſmall black maculæ.

CARCAJOU. An animal of the feline tribe, about the ſize of a badger; having a tail ſo very long, that it will wrap ſeveral times round it's body. This creature, which is of a reddiſh brown colour, is a formidable enemy to rein-deer, waiting whole weeks at a time for it's prey, hid in the branches of ſome ſpreading tree; and, while the wild rein-deer paſſes underneath, it inſtantly drops down on it, and fixes it's teeth and claws in it's neck, exactly behind the horns. In vain does the wounded animal then attempt to fly; the murderer ſtill maintains it's former poſition; and though it often loſes a part of it's ſkin and fleſh by being rubbed againſt the trees, it never quits it's hold till it's prey drops down through fatigue and loſs of blood. The deer has but one method of eſcape, which is by jumping into the water, an element to which the Carcajou has a rooted averſion.

CARCARIAS CANIS. A ſpecies of ſhark.

CARDANES. A ſmall inſect reſembling the beetle, very ſoft to the touch, and emitting a fragrant ſmell. It is of a blackiſh colour; and is very ſwift in it's motions, having two ſhort wings which do not nearly reach the tail. It is very remarkable, that the tail of this creature is of the ſame ſhape with the head; ſo that, when at reſt, it appears as if furniſhed with two heads.

CARDINAL. A beautiful American bird, which abides in it's neſt throughout the winter, there ſubſiſting on ſuch proviſions as it had collected during the ſummer, ſometimes amounting to the quantity of a Paris buſhel, which are artfully depoſited, and covered firſt with leaves, and then with ſmall branches. Two ſpecies of this bird have been noticed by naturaliſts.

CARDINAL, CRESTED. This bird is about the ſize of a groſbeak. The head is adorned with an upright creſt, of a crimſon-colour; and the cheeks and lower part of the neck are likewiſe red. The back and wings are cinereous; the breaſt and belly are white; the tail is long; the middle feathers are cinereous, and the exterior duſky; and the legs are of a fleſh-colour. This beautiful creature is a native of the Brazils, and was firſt deſcribed by Buffon.

CARDINAL, DOMINICAN. This bird is of a moderate ſize. The upper mandible is duſky, or horn-coloured, and the lower whitiſh. The eyes are black, and the irides hazel; and the whole head is of a beautiful red or ſcarlet colour, which reaches down the fore-part of the neck and throat as far as the breaſt, and terminates in a point. The upper-ſide of the neck, the back, wings, and tail, are blackiſh. The quills which fall next to the back are bordered with white, as well as the covert-feathers next above them; the leſſer covert-feathers of the wings and back have a ſmall admixture of grey, by which they appear as if fringed; the tail-feathers are edged with white; and the ſides of the neck, the breaſt, and the entire under-ſide as far as the tail, are purely white. It has four toes, three ſtanding forward, and one backward, but all of a brown-colour. The Dominican Cardinal is a native of the Brazils, and has been deſcribed by Marcgrave under the name of the guiratirica.

CARDINALITIUS. A name given by ſome naturaliſts to the cocothrauſtes Indica criſtata, commonly called the Virginian nightingale.

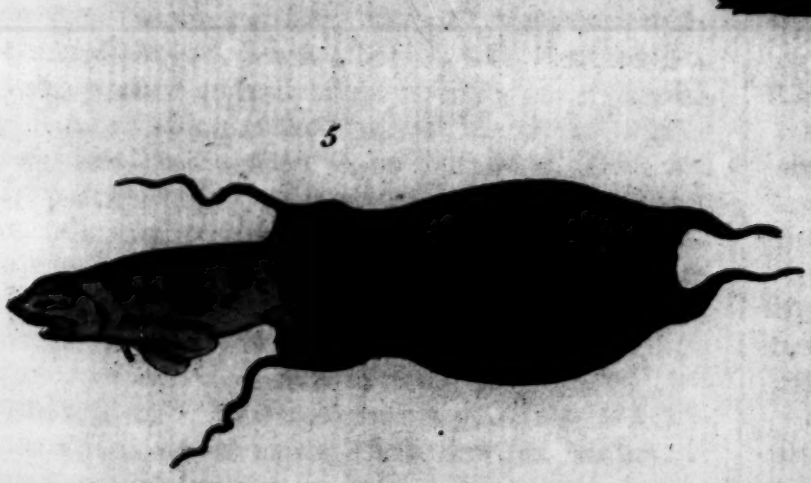
CARDIUM. A genus of worms in the Linnæan ſyſtem, belonging to the order of teſtacea.

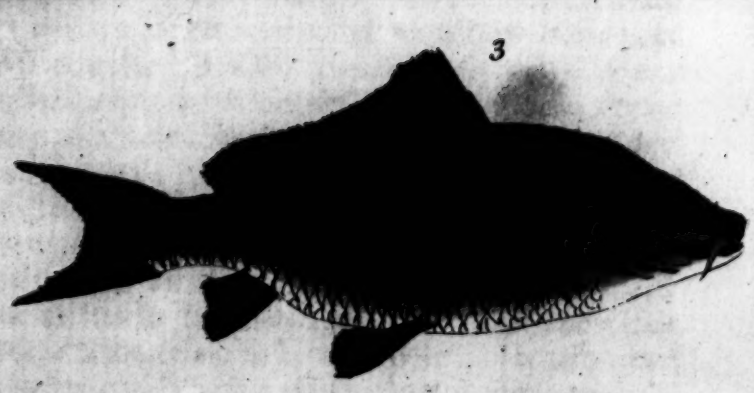
CARDUELIS. A well-known bird, called in Engliſh the gold-finch, and by ancient naturaliſts chryſomitres and acanthis; the firſt from it's yellow head, and the laſt from it's feeding among thiſtles.

CARETTA. See TORTOISE.

CARIAMA. A Brazilian bird of the ſize of a heron; and, like that bird, frequenting watery places. It makes a loud noiſe like the turkey, and is a ſpecies of the palamadea. It's fleſh is extremely delicious

CARIBOU. An American animal of the ſtag kind, chiefly found about Hudſon's Bay, though it has been frequently ſeen in Canada. It is not quite





1. CRESTED CARDINAL. 2. DOMINICAN CARDINAL. 3. CARP. 4. CASSOWARY.

5. CAT-FISH. 6. PATAGONIAN CAVY. 7. CAYOPOLIN. 8. CIVET.

Plate XXX.

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quite ſo tall as the mooſe-deer, and is in ſhape more like the aſs than that animal. The tongue is eſteemed a peculiar delicacy. The Caribou is amazingly ſwift; and has a ſort of large, flat hoofs, furniſhed with very ſhort hair between the diviſions, which prevent it from ſinking in the ſnow, on which it runs as fleetly as on firm ground.

Some think that this animal has a reſemblance to the rein-deer of Lapland, though the horns are very diſſimilar, eſpecially in thoſe which haunt the woods. The carcajou is an implacable enemy to this creature, and accordingly perſecutes it on all poſſible occaſions.

CARIGOY. An appellation by which ſome authors have deſcribed a very ſingular animal, a native of America, more uſually known by the name of opoſſum.

CARP. One of the naturalized fiſh of this iſland, which was imported into it by Leonard Maſchal about the year 1514; and is the moſt valuable of all kinds of fiſh for the ſtocking of ponds, becauſe of it's quick growth and prodigious increaſe. If the breeding and feeding of Carp were better underſtood and more frequently practiſed, the advantages would be very great, and fiſh-ponds no longer be deemed expenſive. The ſale of Carp conſtitutes a part of the revenue of the nobility and gentry in Pruſſia, Pomerania, Brandenburgh, Saxony, Bohemia, Mechlenburg, and Holſtein.

In order to reap every deſirable advantage from this fiſh, particular attention ſhould be paid to the ſoil, water, and ſituation of the Carp-pond: the moſt eligible ponds are thoſe which are ſurrounded by the fineſt paſtures or corn-fields of a rich black mould, having ſoft ſprings or running water on the ſpot, neither too cold, nor impregnated with acid, calcareous, ſelenitic, or other mineral particles. The water, indeed, may be ſoftened by expoſing it to the air and the ſun in a reſervoir, or by forming an open channel for it at ſome diſtance from the pond. The fiſh likewiſe ſhould be ſheltered from eaſterly and northerly winds, and be only expoſed to the full influence of the ſun.

Experience has evinced that it is moſt convenient to have three kinds of ponds for Carp; namely, the ſpawning-pond, the nurſery-pond, and the main-pond. The firſt ſhould be well cleared of every other ſpecies of fiſh, eſpecially thoſe of the rapacious kind, be plentifully ſupplied with ſoft water, and have a warm expoſure. A pond of the extent of one acre requires three or four male Carp, and ſix or eight females; and ſo in proportion for every additional acre. The beſt breeding Carp are thoſe which are five, ſix, or ſeven years old, with full ſcales, fine full eyes, and long bodies without any viſible defects; and the pond ſhould be ſtocked towards the end of March or beginning of April. Carp ſpawn in May, June, or July, according to the warmth of the ſeaſon; and for this purpoſe they ſwim to a ſhady, warm, ſheltered place, where they gently rub their bodies againſt the ſandy ground, graſs, or oziers, and by this preſſure the milt iſſues out. The young fry, hatched from the ſpawn by the genial influence of the ſun, ſhould be left in this pond throughout the whole ſummer, and even the ſucceeding winter, if the water be ſufficiently deep to prevent their ſuffocation under the ice during a ſevere one; otherwiſe the breeders and the fry ſhould be put into ſeparate ponds more commodious for their brumal habitations.

The ſecond kind of ponds are the nurſeries into which the young fiſh ſhould be removed in March or April, on a fine calm day, about the proportion of a thouſand to a pond of one acre. When they are firſt put in, they ſhould be well watched, and driven from the ſides of the pond, leſt they become the prey of rapacious birds; and in the ſpace of two years they will grow to the weight of four, five, and ſometimes ſix pounds.

The main-ponds ſhould be ſtocked with ſuch fiſh as are each about one foot in length, head and tail included. Every ſquare of fifteen feet is ſufficient for one Carp; and it is univerſally allowed, that their growth depends on the room, as well as the quantity of food allowed them. The beſt ſeaſons for ſtocking the main-ponds are thoſe of ſpring and autumn, when the fiſh continue to grow for a conſiderable time.

Carp are generally very long lived; and Geſner makes mention of one which was an hundred years old. They alſo grow to a very great ſize; and in this country ſome have been caught which weighed twenty pounds. Jovius ſays that, in the Lacus Larius, they are ſometimes found of the weight of two hundred pounds; and Rzaczynſki mentions ſome which were caught in the Dniſter of the length of five feet. Carp are extremely tenacious of life, and will exiſt ſeparate from their natural element for a conſiderable time. Experiments of this kind have been made, by placing them in nets, well wrapped up in wet mops, their mouths only remaining uncovered; and then hanging them up in a cellar, or ſome other cool place, feeding them at intervals with white bread and milk, and frequently plunging them into water. Carp, thus managed, have been known not only to have lived above a fortnight, but to grow exceedingly fat, and far ſuperior in taſte to thoſe which were recently killed from the pond.

The Carp, as has been previouſly obſerved, is a prodigious breeder; and it's quantity of roe has ſometimes been ſo great, that when taken out and weighed againſt the fiſh itſelf, the former has been found to preponderate. From this ſpawn, caviare is made for the Jews, who hold the ſturgeon in abhorrence.

Theſe fiſh are exceſſively cunning, and on that account are by ſome ſtiled river-foxes. They ſometimes leap over the nets, and by that means eſcape; and at others, they immerſe themſelves ſo deep in the mud, that the net paſſes over them. They are alſo very ſhy of taking a bait; though at ſpawning-times they are ſo very ſimple, that they ſuffer themſelves to be tickled, handled, and caught with facility. They have been obſerved to mix their milts with the roes of other fiſh, from which a ſpurious breed is produced.

The Carp is of a thick figure; the ſcales are very large; and, when in full ſeaſon, of a fine gilded hue. The jaws are of equal lengths; and there are two teeth in the jaws, or on the tongue; but at the entrance of the gullet, both above and below, there are certain bones, which act on each other, and comminute the food before it paſſes into the ſtomach. On each ſide of the mouth there is a ſingle beard; and above theſe, on each ſide, there is another, but ſhorter. The dorſal fin extends far towards the tail, which is ſlightly bifurcated; the third ray of the dorſal fin is very ſtrong, and armed with ſharp teeth pointing downwards; and the third ray of the anal fin is of a ſimilar conſtruction.

CARPIONE. A name given by Salvian to the fiſh called by other writers carpio lacus Benaci.

It

It is the ſame with that called in ſome parts of England the red charre. Artedi diſtinguiſhes it from the other ſpecies of ſalmon, by calling it the ſmall ſalmon with five rows of teeth in the palate.

CARRIER PIGEON. A variety of the common pigeon, ſo called from it's being employed in conveying letters from one place to another. It is in general larger than the other ſpecies, it's length from the tip of the beak to the end of the tail being frequently fifteen inches. It's fleſh is firm, it's feathers are cloſe, and it's neck is long and well turned. The upper chap of the bill is half covered, from the head downwards, with a white or blackiſh tuberous furfuraceous fleſh, which projects over both it's ſides on the upper-part, and terminates in a point about the middle of the bill; and this is called the wattle. The eyes are ſurrounded with the ſame ſort of corrugated fleſh, and their irides are red. The beak is long, ſtraight, and thick; the head is narrow, long, and flat; the neck is long and thin; and the breaſt is broad. The colour of the Carrier Pigeon is chiefly black or dun, though there are ſome blue, white, and pyed.

The uſe of theſe Pigeons is of a very ancient date. Anacreon informs us, that he conveyed his billet-doux to his beautiful Bathyllus by a dove. Tauroſthenes alſo, by means of a Pigeon which he had decked with purple, ſent advice to his father, who lived in the Iſle of Ægina, of his victory in the Olympic Games, on the very day he had obtained it. At the ſiege of Modena, Thitius without, and Brutus within the walls, kept a conſtant correſpondence by means of theſe winged meſſengers, baffling every art of Antony, the beſieger, to intercept them. There are numerous inſtances on record of the ſervices rendered by theſe pacific birds during the cruſades. Joinville relates one which took place at the cruſade of St. Louis; and Taſſo mentions another which was effected during the ſiege of Jeruſalem.

This practice was formerly much in vogue in the Eaſt; and at Scanderoon, till of late years, theſe birds uſed to give the merchants at Aleppo more expeditious notice of the arrival of a ſhip than could poſſibly have been done by any other means of conveyance.

Theſe Pigeons, however, are not now foſtered with ſo much care as formerly, when they were ſent from governors in beſieged cities to generals who were coming to relieve them without, diſpatched by princes to their ſubjects with the news of ſome fortunate event, or from lovers to their miſtreſſes with expreſſions of their paſſion. The principal uſe now made of them in this country, is that of expediting the tidings of public executions to ſuch perſons as are concerned in them; much in the ſame manner as, when ſome ancient hero was about to be interred, an eagle was let off from the funeral-pile, in order to complete his apotheoſis.

If we inveſtigate the cauſes which produce this extraordinary quality in the Carrier Pigeon, we ſhall find them proceeding from it's attachment to it's native place, and particularly to that ſpot where it has nouriſhed it's young. The bird is brought from the place where it was bred, and whither it is to be ſent back for information. A letter is tied under it's wing, and the Pigeon is then emancipated. The little animal no ſooner finds itſelf at liberty, than it's paſſion for it's native habitation directs all it's motions. It inſtantly mounts into the clouds to an amazing height; and then, with the greateſt certainty and exactneſs, directs it's courſe, by ſome ſurprizing inſtinct, towards the place of it's abode, though at the diſtance of many miles. By what marks it is capable of diſcovering the place, or by what chart it is guided in a proper line, is to us utterly unknown: certain however it is that, in the ſpace of half an hour, the Carrier Pigeon can perform a journey of forty miles, which is a degree of diſpatch three times greater than the fleeteſt quadruped can accompliſh.

CARTILAGINOUS FISHES. A particular claſs of fiſhes, in which the ſpine or back-bone is of the conſiſtence of a cartilage, being hollow within, and containing medulla.

Cartilaginous Fiſhes are of two kinds; flat, as the raia or ſkate; and long and round, as the aſellus or cod.

CARYOCATACTES. A bird of the magpie kind, of a browniſh colour, beautifully variegated with white triangular ſpots, and very full of white feathers about the anus and the origin of the tail. It is very common in the mountainous parts of Germany.

CASPARGUS. A name borrowed from Ælian, and applied by Salvian to the fiſh commonly called ſparus by naturaliſts. It is diſtinguiſhed by Artedi under the name of the plain yellowiſh ſparus, with a large annular ſpot near the tail.

CASQUE. A name ſometimes given to a kind of murex, called the helmet-ſhell. There are ſeveral ſpecies, all approaching ſomewhat to a triangular figure, and ſmoother than the reſt of the family of murices; and they are farther diſtinguiſhed by having a ſort of tubercles near the lip.

CASSANDRA. An elegant ſea-ſhell, of the concha globoſa, or dolium kind, more uſually known by the name of the lyra, or harp-ſhell. There are three ſpecies; and they are ſuppoſed to receive the name of Caſſandra from their being found on the ſhores of the Iſle of Caſſan.

CASSAON. A ſmall fiſh of the ſhark kind, but infinitely leſs miſchievous; called cucuri by the Brazilians.

CASSIDA. A genus of beetles, comprehended by Linnæus under the order of coleoptera in the claſs of inſects.

Under this genus are comprehended all the clypeated beetles, or thoſe covered with a hard cruſt, of which there are many ſpecies; but the moſt remarkable are the following.

CASSIDA BLACK, or SHIELD-BEETLE. This ſpecies, which has briſtly feelers and a ſmall roundiſh body, is of a duſky black colour. The caſes of the wings are oblong, and ſlightly ſtreaked with ſeveral ſmall and very hollow ſpots. The ſhield is roundiſh, being ſomewhat broader than long, and rough on the upper-part, with a cruciated prominent edge; and ſometimes there are two ſpots on the ſide towards the hinder-part, covered with yellow hair. The belly is black; but, when viewed in different lights, appears to have a ſilvery gloſs. This beetle is found in country-houſes, where it is very miſchievous, frequently eating holes in woollen cloths and ſtuffs. When touched, though ever ſo gently, it draws up it's head and wings under it's body.

CASSIDA OVAL, PALE CLOUDED, with an undivided ſhield covering the head. The body of this ſmall inſect is of an oval ſhape, and a pale brown colour ſpotted and clouded all over with a more duſky hue, reſembling in ſome meaſure the ſhell of a tortoiſe. The ſhield is ſemi-lunated, and of

of a pale colour without ſpots; but the caſes of the wings are ſtreaked and ſpeckled, the ſtreaks running in crooked lines; and the feelers are ſlender, and of a black colour. It is found in beds of baum and mint, and on various hortulane productions.

CASSILI. A Philippine name for a ſpecies of water-raven, called alſo colocolo.

CASSIS LÆVIS. A name given by Rumphius, though very improperly, to the genus of ſhells called dolia, and conchæ globoſæ.

CASSOWARY. A bird which inhabits the iſland of Java, and ſeveral parts of Africa, being one of the largeſt and heavieſt of the feathered ſpecies. It is about five feet and a half long from the point of the bill to the extremity of the claws. The head and neck together are a foot and a half long; and the largeſt toe, including the claw, is five inches. The wing, which is in a great meaſure concealed under the feathers of the back, is ſo very ſmall as to be almoſt imperceptible. Part of the feathers of other birds accelerate their flight, and are different from thoſe which ſerve merely for a covering; but, in the Caſſowary, all the feathers are of one kind, and externally of the ſame colour; they are alſo generally double, having two long ſhafts proceeding from a ſhort ſocket fixed in the ſkin. Thoſe which are double are always of unequal lengths, ſome being fourteen inches long, particularly on the rump; while others are not more than three. The beards which adorn the ſtem or ſhaft are, from about half way to the end, very long, and as thick as a horſe-hair, without being ſubdivided into fibres. The ſtem or ſhaft is flat, ſhining, black, and knotted below, and from each joint proceeds a beard; and the beards at the extremity of the large feathers are perfectly black, and of a grey tawny colour towards their roots. The feathers on the head and neck are ſo ſhort, as well as thinly diſperſed, that the ſkin of the bird appears naked, except towards the hind-part of the head, where they are ſomewhat longer; while thoſe on the rump are extremely thick, though in other reſpects they differ very little from the reſt, except in being longer. The wings, when ſtripped of the feathers, are only three inches long. The extremities of the wings are adorned with five prickles of different lengths and thickneſſes, bend like a bow, are hollow from the roots to the very points, and contain only that ſlight ſubſtance which is found in all quills. The longeſt of theſe prickles is eleven inches: it is a quarter of an inch diameter at the root; but, towards the extremity, the point ſeems broken off.

The moſt remarkable part of the Caſſowary, however, is it's head; which, though ſmall like that of an oſtrich, inſpires ſome degree of terror. It is, as already obſerved, deſtitute of feathers, and armed with a kind of helmet of a horny ſubſtance, which covers it from the baſe of the bill to near half the head backwards. This helmet is black before, and yellow behind; and it's ſubſtance is extremely hard, being formed by the elevation of the bone of the ſkull, conſiſting of ſeveral plates, one over another, like the horns of an ox. Some naturaliſts have ſuppoſed that this helmet is ſhed every year with the feathers; but the moſt probable opinion is, that it only exfoliates ſlowly like the beak. To the peculiar ſingularity of this natural armour of the animal may be added the colour of the eye, which is a bright yellow; and the pupil being above an inch and a half in diameter, gives it an air equally fierce and extraordinary. At the bottom of the ſuperior eye-lid there is a row of ſmall hairs; over which is another of black hair, having pretty much the reſemblance of an eye-brow. The inferior eye-lid, which is the largeſt of the two, is alſo furniſhed with a conſiderable quantity of black hair. The aperture of the ear is very large and open, being only ſhaded with ſmall black feathers. The ſides of the head, about the eye and the ear, which have no covering, are blue, except the middle of the lower eye-lid, which is white. The upper part of the bill is very hard at the ſuperior edges, and it's extremity is like that of a turkey-cock. The end of the lower mandible is ſlightly notched; and the whole is of a greyiſh brown, except a green ſpot on each ſide. As the beak admits of a very wide opening, this circumſtance contributes greatly to the formidable appearance of the bird. The neck is of a violet-colour, inclining to that of ſlate; and red behind in ſeveral places, but particularly in the centre. About the middle of the neck before, at the riſe of the large feathers, there are two protuberances formed by the ſkin, which ſomewhat reſemble the gills of a cock, excepting that they are blue as well as red. The ſkin which covers the fore-part of the breaſt, on which this bird leans and reſts, is hard, callous, and deſtitute of feathers. The thighs and legs, which are feathered, are extremely thick, ſtrong, and ſtraight, and covered with ſcales of various ſhapes. The toes, which are only three in number, are likewiſe covered with ſcales; and the claws are of a hard ſolid ſubſtance, externally black, and internally red.

If anatomically regarded, the other parts of the Caſſowary are equally remarkable. It unites with the double ſtomach of animals which live on vegetables, the ſhort inteſtines of thoſe which live on fleſh. The inteſtines of this bird are amazingly ſhort; and the heart is not more than an inch and a half long, and an inch broad at the baſe. On the whole, it has the head of a warrior, the eye of a lion, the defence of a porcupine, and the ſwiftneſs of a courſer. Thus formed for a life of hoſtility, for terrifying others, and for it's own defence, it might naturally enough be concluded that the Caſſowary is one of the moſt fierce and terrible animals of it's kind; but nothing is ſo oppoſite to it's natural character, nothing ſo different from the life it is contented to lead. It never attacks other birds; and, inſtead of it's bill, when attacked, it makes uſe of it's legs, and either kicks like a horſe, or runs againſt it's purſuer, beating him down, and treading him under it's feet.

Nor is the motion of this animal leſs extraordinary than it's appearance. Inſtead of going directly forward, it ſeems to kick up behind with one leg; and then making a bound onward with the other, it advances with ſuch prodigious velocity, that the ſwifteſt racer would be left far behind it.

The Caſſowary is ſo little ſuſceptible of the ſenſe of taſting, that it indiſcriminately ſwallows every thing within it's reach. The Dutch aſſert, that it not only devours glaſs, iron, and ſtones, but even burning coals, without either betraying the ſmalleſt ſymptoms of fear, or receiving any injury. It is ſaid that the paſſage of food through it's gullet is performed ſo rapidly, that even the very eggs which it ſwallows paſs through it without the ſmalleſt viſible alteration. In fact, the alimentary canal of this animal, as before obſerved, is moſt remark-

ably ſhort; and perhaps many kinds of food are indigeſtible in it's ſtomach which have not been previouſly maſticated.

The eggs of the Caſſowary are of a grey aſh-colour, inclining to green, and marked with a number of little tubercles of a deep green: the largeſt meaſure about fifteen inches round one way, and twelve the other; and, conſidering their ſize, their ſhells are remarkably thin.

The ſouthern parts of the fartheſt Indies ſeem to be the natural climate of this extraordinary bird; and it's domain, if we may ſo call it, begins where that of the oſtrich terminates. The latter has never been found beyond the Ganges; while the Caſſowary is never ſeen nearer than the iſlands of Banda, Sumatra, Java, and the Moluccas: yet even there this bird ſeems not to have multiplied in any conſiderable degree; and is conſidered as a curioſity in the very country of which it is a native.

CASTAGNOLE. The Italian name of the fiſh called chromis by the generality of authors, and reduced by Artedi to the genus of the ſparus: he diſtinguiſhes it by the name of the ſparus with the ſecond ray of each belly-fin extended to a conſiderable length.

CASTOR. A name ſometimes given to the beaver, in which the drug caſtor is found.

CAT. This animal is principally diſtinguiſhed by it's ſharp and formidable claws, which it poſſeſſes the faculty of extending or concealing at pleaſure. Cats lead a ravenous and ſolitary life; neither uniting, like vegetable feeders, for their mutual defence; nor, like thoſe of the dog kind, for their reciprocal ſupport. The dog, the wolf, and the bear, will ſometimes live on farinaceous food; but all animals of the Cat kind, ſuch as the lion, the tiger, the leopard, and the ounce, devour nothing but fleſh; and, except at certain ſeaſons, are enemies to each other.

Theſe creatures are in general fierce, rapacious, ſubtle, cruel, and utterly incapable of adding to the ſtock of human happineſs; it is probable, however, that even the fierceſt of them might be rendered domeſtic, were the experiment adequate to the trouble. Lions have been yoked to the chariots of conquerors, and tigers taught to tend thoſe herds which they naturally deſtroy.

All animals of the Cat kind are nearly allied to each other, though differing both in ſize and colour; they are alſo equally fierce, artful, and rapacious; and whoever has ſeen one, may judge of all. In other creatures, many changes are wrought by human aſſiduity: the dog, the hog, or the ſheep, are altered in their natures and habits conformably to the neceſſities or caprices of mankind; but all creatures of this kind are inflexible in their forms, and ſtrongly impreſſed with an air of natural wildneſs.

Animals of the Cat kind are remarkable for the ſharpneſs and ſtrength of their claws, which they thruſt from their ſheaths whenever they ſeize their prey. They are alſo equally remarkable for the roundneſs of their heads, the ſhortneſs of their ſnouts, and the large whiſkers which grow on their upper lips. They have each thirty teeth, which are very formidable, but much leſs calculated for maſticating than tearing their food. With reſpect to the dog kind, their greateſt ſtrength lies in their under-jaws; but, in the feline ſpecies, in their claws, which they extend with facility; and their gripes are ſo very powerful, that no human efforts can diſengage them. They are not, however, endued with the ſwiftneſs of moſt other animals, but generally owe their ſubſiſtence rather to catching their prey by ſurprize than fairly hunting it down: all of them ſeize it with a bound, at the ſame time expreſſing their ſavage pleaſure by a roar; and their firſt graſp generally diſables the captive from all reſiſtance. With all theſe qualifications for ſlaughter, they nevertheleſs ſeem timid and cowardly, and ſeldom make an attack till there is every probability of ſucceſs; for when the force againſt them is ſuperior, or even equal to their own, they have recourſe to flight.

CAT, COMMON. This well-known animal has long been domeſticated. Indeed, it is the only creature of it's kind whoſe ſervices can compenſate for the trouble of bringing it up, and whoſe ſize is too inconſiderable to render it formidable. Though eaſily offended, and often capricious in it's reſentments, it is not endowed with power ſufficient to capacitate it for much miſchief. Of all animals, when young, there is none more ſportive than the kitten; but, as it grows up, it ſeems to loſe this diſpoſition, and the innate treachery of it's kind is then ſeen to prevail. Being naturally ravenous, education teaches it to diſguiſe it's appetites, and to watch the favourable moment of plunder; ſupple, inſinuating, and artful, it has the cunning to conceal it's intentions till it can effectually put them in execution; and, when opportunity offers, it at once ſeizes on whatever comes in it's way, flies off with it, and continues in ſolitude till it ſuppoſes the offence is forgotten. The Cat has only the mere ſemblance of attachment; and, from it's timid approaches and ſuſpicious looks, may eaſily be perceived either to dread it's maſter, or diſtruſt his kindneſs: it is aſſiduous rather for it's own pleaſure than from a deſire of pleaſing; and it often gains confidence only to abuſe it.

The form of the body, and the temperament of this animal, correſpond with it's diſpoſition; active, cleanly, delicate, and voluptuous, it is very fond of eaſe, and always makes choice of the ſofteſt bed. Many of it's habits, however, are rather the conſequences of it's formation than the reſult of any perverſeneſs in it's diſpoſition: it is timid and diſtruſtful, becauſe it's body is weak, and it's ſkin tender; and a blow will hurt it infinitely more than a dog, the hide of which is thick, and it's body muſcular.

The Cat goes with young fifty-ſix days, and ſeldom brings forth more than five or ſix at a time. The female uſually hides the place of her retreat from the male, who often devours the kittens. She feeds them for ſome weeks with her milk, and with whatever ſmall animals ſhe can catch by ſurprize, and early accuſtoms them to rapine. Before they are one year old, they are fit to engender; the female ſeeks the male with cries, and their amorous intercourſe is well known to be attended with the moſt diſguſting noiſe. They live to about the age of ten years, during which period they are extremely vivacious, and will endure incredible cruelties before they reſign their breath.

Cats no ſooner arrive at maturity, than they ſhew a diſpoſition for rapine; they often look wiſtfully towards cages in which birds are confined, ſit centinels at the mouths of mouſe-holes, and ſoon acquire from nature every quality requiſite to render them compleat hunters. Indeed, their diſpoſitions are ſo incapable of conſtraint, that all inſtructions are loſt on them. The Greek monks of the iſle of Cyprus, it is ſaid, teach Cats to

hunt

hunt ſerpents, with which reptiles that iſland is greatly infeſted; but this quality may perhaps be natural to theſe creatures, and not the effect of diſcipline. Whatever animals are conſiderably weaker than themſelves, prove to them indiſcriminate objects of ſlaughter. Birds, young rabbits, hares, rats, mice, bats, moles, toads, and frogs, are all equally purſued; though, perhaps, not equally acceptable. The mouſe ſeems to be their favourite game; and though Cats poſſeſs the ſenſe of ſmelling but in a mean degree, they nevertheleſs know thoſe holes in which their prey reſide; and they will ſometimes wait patiently for a whole day together, ſeemingly quite motionleſs, till the victims come within their reach, when they are inſtantly ſeized with a bound. The fixed inclination which Cats diſcover for this peculiar manner of purſuit, ariſes from the conformation of their eyes. The pupil in man, as in moſt other animals, is capable of but a ſmall degree of contraction and dilatation; it enlarges a little in the dark, and contracts when the light pours upon it too profuſely: but, in the eyes of Cats, this contraction and dilatation is ſo conſiderable, that the pupil, which by day appears narrow and ſmall, by night expands over the whole ſurface of the eye-ball, and gives the eyes a fiery appearance. By means of this peculiar ſtructure, their eyes are better adapted for viſion in darkneſs than in light; and the animals are thus fitted for ſpying out and ſurprizing their prey.

Notwithſtanding the Cat is a houſhold animal, it cannot properly be called a dependant: though perfectly tame, it does not acknowledge any obedience; but, on the contrary, is entirely ſwayed by it's own caprice, no art being ſufficient to controul any of it's inclinations. If the inhabitants quit the houſe, the Cat ſtill remains; and, if carried elſewhere, it appears for a time bewildered with it's ſituation, till it becomes acquainted with the retreats of it's prey, as well as with all the little holes and labyrinths through which an eſcape may be effected.

The Cat is equally afraid of water, of cold, and of particular ſmells. It loves to baſk in the ſun, to get near the fire, and to rub itſelf againſt perfumed ſubſtances. It is alſo exceſſively fond of particular plants, ſuch as valerian, marum, and Catmint; againſt which it rubs itſelf, ſmells them at a diſtance, and exhibits every ſign of rapturous intoxication.

As the teeth of the Cat are rather formed for tearing than chewing it's aliments, it eats but ſlowly, and with ſome difficulty; and for this reaſon it loves the moſt tender food, particularly fiſh, which it devours as well raw as boiled. It's ſleep is very light: it often affects a dormant poſture, the better to deceive it's prey; and, in the act of walking, treads very ſoftly, and without noiſe. It's fur is uſually ſleek and gloſſy; and on this account it's hair, which is eaſily electrified, ſends forth ſcintillations when rubbed in the dark. Linnæus informs us, that the Cat waſhes it's face with it's fore-feet at the approach of a ſtorm; but this obſervation would, in our opinion, have with more propriety dropped from a houſe-matron than a naturaliſt, for the rubbing of it's face appears to be only one of it's inſtinctive habits.

The Cat was an animal very highly eſteemed by our anceſtors; and, according to the laws of Howel, the price of a kitten, before it could ſee, was to be one penny; till it caught a mouſe, two-pence; and, when it commenced mouſer, four-pence: it was alſo required that the creature ſhould be perfect in it's ſenſes of hearing and ſeeing, have it's claws compleat, and be an expert mouſer and a good nurſe. If it proved defective in any of theſe qualities, the ſeller was to forfeit to the buyer one-third of it's value; and if any one ſtole or killed the Cat that guarded the prince's granary, he was to forfeit a milch-ewe, with it's fleece and lamb; or as much wheat as, when poured over the Cat ſuſpended by the tail, and the head touching the floor, would form a heap high enough to cover the tip of the former. From hence, beſides a pleaſing picture of the ſimplicity of the times, we diſcover a ſtrong argument that Cats were not naturally bred in our foreſts: an animal which could be ſo eaſily taken, could never have been ſo highly rated; and the precautions laid down to improve the breed would have been ſuperfluous with reſpect to a creature which multiplies in ſuch an amazing degree.

Though this animal is an object of averſion to multitudes, it is a ſingular favourite of the Mahometans; and Maillet, after expatiating largely on the beauty of Egyptian Cats, adds, that the inhabitants build hoſpitals for them. The deſtruction of the Cat was moſt ſeverely puniſhed by the ancient Egyptians: whether the death of that animal had been occaſioned through inadvertency, or otherwiſe, the perſon who had killed it was accounted equally culpable; and that crime could only be expiated by the moſt cruel torments. 'When the Cat dies a natural death,' ſays Herodotus, 'all the people of the houſe where that accident has happened, ſhave their eye-brows, as a token of ſorrow; and the Cat is embalmed, and honourably interred.' The veneration of the Egyptians for this creature was founded on an opinion prevalent among them, that Diana, in order to avoid the fury of the giants, had concealed her divinity under the form of that animal; and the God-Cat was ſometimes repreſented among them by it's whole native form, and ſometimes by the body of a man bearing the head of a Cat.

Cat, Angora. The hair of this animal is long, and of a ſilvery whiteneſs and ſilky texture, forming a fine ruff about it's neck; and that on the tail is very long and ſpreading. It grows to a conſiderable ſize; and is found in Angora, the ſame country which produces the fine-horned goat. After the firſt generation, it uſually degenerates in our climate. A variety of this genus is found in China, having pendent ears; of which the Chineſe are very fond, and ornament their necks with ſilver collars. This creature is a great deſtroyer of rats, and ſeems to be the ſame with the domeſtic animal which the Chineſe call ſumxi.

Cat, Blue. A ſpecies of the feline tribe, found in Perſia, particularly in the province of Chorazan, of the figure and ſhape of the common Cat, but infinitely more beautiful in the luſtre and colour of it's ſkin, which is a grey blue without mixture, and as ſoft and ſhining as ſilk. The tail is very long, and covered with hair ſix inches in length, which the animal throws upon it's back like the ſquirrel. Theſe Cats are well known in France; and have been imported into England under the name above-mentioned.

Cat, Wild. This animal, in it's ſavage ſtate, is conſiderably larger than the domeſtic Cat; and it's fur being longer, it on that account appears larger than it really is. It's head is alſo bigger, it's face is flatter, and it's teeth and claws are much more formidable

formidable than thoſe of that animal. Being formed for rapine, it's muſcles are very ſtrong; and it's tail, which is of a moderate length, is very thick and flat, marked with alternate bars of black and white, the tip being always black. The general colour of this animal, in England, is a yellowiſh white, mixed with a deep grey; and the fur is very ſoft and fine. Though theſe colours appear at firſt ſight to be confuſedly blended together, on a cloſer inſpection they will be found to be diſpoſed like the ſtreaks in the ſkin of the tiger, pointing from the back downward, riſing from a black liſt which runs from the head along the middle of the back to the tail.

This creature, which inhabits the moſt mountainous and woody ſpots, lives chiefly in trees, feeds only by night, and is the moſt deſtructive of all carnivorous animals in this kingdom. It does not ſpecifically differ from the tame Cat; the latter being originally of the ſame kind, but only varying in colour, and ſome other trifling accidents common to domeſticated animals. The Wild Cat multiplies as faſt as the domeſtic one, and has been often known to breed with it. This animal was formerly reckoned among the beaſts of chace; as appears by a charter granted by Richard II. to the Abbot of Peterborough, permitting him to hunt the hare, the fox, and the Wild Cat; and, according to authentic records, it ſeems to have been the object of the ſportſman's diverſion even in much earlier times. It is probable, however, that thoſe were not original inhabitants of this kingdom, but firſt introduced in a domeſtic ſtate, and afterwards became wild either through ill uſage or neglect.

The Cat is one of thoſe few animals which are common to the new continent as well as the old; for when Columbus firſt diſcovered that country, a hunter preſented him with one captured in the woods, which was of the ordinary ſize, and had a long thick tail.

Cat, Wild, of Louisiana. This animal, which reſembles the marmot rather than the Cat, is only nine or ten inches high, and eighteen long; and it's head is like that of a fox. The fleſh of theſe creatures is eſteemed proper for food; and thoſe which are tamed become extremely familiar and ſportive.

There is another ſpecies of Wild Cat found in North America, entirely different from that of Europe, being larger, more nimble and ferocious, and having a very ſhort tail. This animal ſcreams in a very diſmal manner, eſpecially in the night-time; runs up trees with great agility, and generally takes it's food by ſurprize. It is ſpotted like a leopard, and it's ſkin is applied to various beneficial purpoſes.

Cat, Wild, of the Cape of Good Hope. There are ſeveral varieties of this animal; but they are either ſo negligently or unſcientifically mentioned, as to render it impoſſible for a zoologiſt to give a proper deſcription of them. Kolber mentions two kinds; one of which he calls the Wild Red Cat, diſtinguiſhed by a bright red ſtreak running along the ridge of the back to the tail, and loſing itſelf in the grey and white on the ſides. Their ſkins are ſaid to afford relief in gouty caſes; and, on that account, are much valued at the Cape. To the other variety he gives the name of the Buſh Cat, of which he only informs us that it is the largeſt of all the Wild Cats in the Cape countries.

Cat, Tiger. This animal is alſo called the Cat of the Wood, becauſe it uſually frequents woods and groves. It is ſpotted nearly like the tiger; and it's ſkin is covered with excellent fur, which is uſed as well for warmth as ornament, and is extremely valuable.

Cat, Mountain, or Catus Pardus. An American animal, two feet and a half long from the noſe to the root of the tail, about eighteen inches high, and having a tail eight inches long. In ſhape and appearance, it bears a ſtrong reſemblance to the common Cat, except that the tail is ſhorter in proportion to the body. The hair or fur is of a reddiſh colour; but that of the belly and the inſides of the fore-legs is whitiſh; and that under the throat and lower-jaw is entirely white. The whole ſkin is beautified with black ſpots of different figures, of an oblong ſhape on the back, and roundiſh on the belly and paws. On the ears there are ſeveral tranſverſe black ſtripes; but, in other reſpects, they reſemble thoſe of the European Cat. The whiſkers are ſhort; and there is no long hair on the eye-brows and cheeks, as in the common Cat. All the inteſtines ſeem of an equal thickneſs, being two-thirds of an inch in diameter; and even the rectum and colon are only one-third of an inch thicker than the reſt. The ſtomach is very large; and in the ſinuoſity, between the upper and lower orifice, there is a membrane filled with fat, which unites them together.

This creature is of a mild and gentle nature, and becomes very corpulent.

Cat, Civet. This animal has ſhort round ears, light blue eyes, and a ſharp noſe tipped with black. The ſides of the face, the chin, breaſt, legs, and feet, are black; and the reſt of the face, as well as part of the ſides of the neck, are white tinged with yellow. From each ear run three black ſtripes, which terminate at the throat and ſhoulders. The back and ſides are cinereous, tinged with yellow, and marked with large duſky ſpots, diſpoſed in rows. The hair is coarſe; but that on the top of the body is longeſt, and ſtands up like a mane. The tail is ſometimes wholly black, and at others ſpotted near the baſe. It's length, from the noſe to the tail, is about two feet three inches; the tail itſelf is fourteen inches long; and the body is pretty thick.

The Civet Cat inhabits India, the Philippine Iſles, Guinea, Ethiopia, and Madagaſcar. The celebrated drug, muſk or civet, is produced from an aperture between the genitals and the anus, in both ſexes, ſecreted from ſeveral glands. Thoſe who keep theſe animals, procure the muſk by ſcraping the inſide of this bag twice a week with an iron ſpatula, and collect about a drachm each time; but it is ſeldom ſold pure, being generally adulterated with oil or ſuet, in order to render it heavier. The males yield the largeſt quantity, eſpecially when they are previouſly irritated. When young, they are fed with pap made of millet, and a little fiſh or fleſh; when old, with raw fleſh; but, in a wild ſtate, they prey on fowls. Several of theſe animals, which, to all external appearance, ſeemed females, were diſſected by the members of the Royal Academy at Paris: the parts of generation in the males were hid within the body; or rather, there was not the leaſt ſign of any diſtinction of the ſexes. The opening of the pouch or bag, which is the receptacle of the civet, was under the anus, and not under the tail, as ſome authors have maintained. Under it there was another ſmall aperture, at the diſtance of two inches and a half; and the pouch itſelf was two inches

and

and a half broad, and three long. It's opening made a chink, from the top downwards, two inches and a half deep; and it was covered round the edges, and internally, with ſhort hair. When the two lips were drawn aſunder, the inner capacity might be ſeen, which was large enough to contain a pullet's egg. The bottom was pierced to the right and left with two holes capable of admitting the point of the little finger, each of which penetrated into a bag covered with a white ſkin like that of a gooſe. The eminences formed by this inequality were pierced with pores, from which might be ſqueezed the ſcented fluid, called ribet by the Arabians, from which the Engliſh term Civet is derived.

Buffon deſcribes another variety of this animal, which he calls the zibet, and which differs from the other in having a more ſlender body, a thinner ſnout, large high ears, a longer tail, and the hair all over the body of an uniform length.

Cat, Sea. The Sea-Cat is about half the ſize of the ſea-lion, but thicker about the breaſt and towards the tail; the ſnout is alſo longer than that of the ſea-lion, and the teeth are larger; the eyes are like thoſe of the cow; the ears are ſhort; the paws are naked and black; and the hair is black mixed with grey, very ſhort and brittle. The young are of a blueiſh-black colour.

Sea-Cats are caught in the vicinity of the River Shupanova during the ſpring and autumn, at which ſeaſons they migrate from the Kurilſkoy iſland to the American coaſt; but they are taken in greater numbers about the Cape of Kronotzkoy. Almoſt all the females which are caught in the ſpring are pregnant; and ſuch of them as are near bringing forth are immediately opened, and the young taken out and ſkinned. The females ſuckle their young with two teats, which are placed between their hinder paws; and they ſeldom have more than one at a time. Their young ſee as ſoon as they are whelped; and they have thirty-two teeth, excluſive of their tuſks, two of which are on each ſide, and begin to appear the fourth day after their birth. Their colour is at firſt a dark blue, but in the ſpace of four or five days grey hairs begin to appear between their hinder legs; and, at the end of one month, their bellies are black and grey. The male is larger and blacker than the female, who, as ſhe grows up, turns almoſt of a blue colour, having only grey ſpots between her fore-legs. The male and female differ ſo much in the form and ſtrength of their bodies, that, if not carefully examined, they may readily be taken for different ſpecies. One male has generally from eight to fifteen, and even ſometimes fifty, females, over whom he watches with ſuch jealouſy, that no ſtrangers are ſuffered to approach them; and though many thouſands lie on the ſhore, every family keeps apart; that is, the male, with his wives, young ones, and thoſe of a year old, who have not yet attached themſelves to any male; ſo that a ſingle family ſometimes conſiſts of not leſs than one hundred and twenty. They likewiſe ſwim at ſea in prodigious droves; and the old ones live apart, and ſometimes ſleep a whole month together without food. Theſe creatures are amazingly fierce, attacking all who paſs them; and ſo obſtinate are they, that they will rather die than quit their places. When they perceive any perſon approaching, ſome of them ruſh on him, while others lie ready to aſſiſt their companions. They bite the ſtones which are thrown at them; and though their teeth, or even their eyes, are ſtruck out, they will not quit their ſtations: nor dare they; for, at every ſtep any one of them moves off, he is ſure to create himſelf a new enemy; ſo that, could he eſcape the fury of human attacks, his own companions would inevitably deſtroy him. If any one of them makes a ſhew of retiring, the others draw near, in order to prevent him; and, if any one ſeems to ſuſpect the courage of another, he falls on him, and chaſtiſes him. This ſuſpicion of each other is ſometimes carried ſo far, that for a furlong's length nothing is to be ſeen but bloody fights; and, on ſuch occaſions, the combatants may be paſſed without danger. If two attack one, ſome of the reſt always ſupport the weakeſt, for they do not allow of unequal combat; and, during ſuch conteſts, thoſe Cats which are ſwimming in the ſea raiſe their heads, in order to look at the behaviour of the combatants; till at length, becoming fierce themſelves, they forſake the water, and increaſe the number of ſuch champions.

Mr. Steller made the following experiment. With his Coſſacks he attacked one of the Sea-Cats, put out it's eyes, and irritated four or five more by throwing ſtones at them. When theſe creatures purſued him, he ran towards the blind one; which hearing the running of it's companions, and not knowing whom they purſued, attacked them. Mr. Steller then retired to an eminence, from which he obſerved the battle for ſome hours. The blind Cat aſſaulted it's companions indiſcriminately, even ſuch as took it's part; ſo that at length they all fell on the blind animal, and allowed it no reſt either on the land or in the ſea; out of which laſt they dragged it on ſhore, and tore it to pieces.

When only two of theſe animals engage, the battle frequently laſts for an hour: during which they ſometimes reſt a little, and lie down near each other; and afterwards they both riſe at once, and renew the engagement. They generally fight with their heads erect, and turn them aſide from the ſtrokes of each other. So long as their ſtrength remains equal, they contend with their fore-paws; but, when one party becomes weak, the other ſeizes it's antagoniſt with it's teeth, and throws it on the ground: and whenever their companions obſerve this, they fly to the aſſiſtance of the vanquiſhed. The wounds inflicted with their teeth are generally as deep as thoſe of a ſabre; and, at the concluſion of theſe ſkirmiſhes, they throw themſelves into the water, in order to waſh their bodies.

The accidental cauſes of the contentions of theſe creatures are in general the following. The firſt and moſt bloody is on account of their females, when one of them endeavours to carry off the miſtreſs of another, or the young ones that are females, who always follow the conqueror. The ſecond reſpects their places of retreat, when one approaches too near another; of which encroachments they never admit, either for want of room, or becauſe they are jealous of each other's proximity to their reſpective miſtreſſes. And the third relates to their endeavouring to do juſtice to each other, and to the compromiſing of their quarrels.

The male Cat is very fond of his offspring; but both the females and the young fear him extremely, as he ſometimes treats them moſt tyrannically. When any perſon endeavours to catch one of their young, the male ſtands on the defenſive, while the female attempts to ſave herſelf and her brood by flight; but, if ſhe happens to drop the young one

out of her mouth, the male immediately leaves his enemy, and ſeizing on her with his teeth, beats her againſt the ſtones till he leaves her for dead. As ſoon, however, as ſhe recovers, ſhe crawls to his feet, which ſhe licks, and waſhes with her tears, which flow in abundance. In the mean time, the male ſtalks backwards and forwards, gnaſhing his teeth, and toſſing his head like a bear; till at laſt, on perceiving that his antagoniſt has carried off the little one, he alſo begins to weep.

When the Sea-Cat lies on the ſhore, and diverts itſelf, it lows like a cow; when it fights, it growls like a bear; when it has vanquiſhed it's enemy, it chirps like a cricket; but, when it is itſelf vanquiſhed or wounded, it groans or mews like a common Cat; and, when it quits the water, it generally ſhakes itſelf, ſtrokes it's breaſt with it's hinder paws, and ſmoothes the hair on it. The male, when ſleeping, lays his ſnout to that of the female, as if in the act of kiſſing her; and, when lying in the ſun, they hold up their paws, and wag them as dogs do their tails. They do not, however, ſleep ſound; and their ſmell and hearing are ſurprizingly acute.

Theſe animals ſwim ſo very faſt, that they can eaſily accompliſh ten miles in an hour; and when they happen to be wounded at ſea, they ſeize the fiſhing-boats with their teeth, and drag them along with ſuch ſwiftneſs, that they appear to fly, and not to ſwim on the water; and by this means a boat is frequently overturned, unleſs the ſteerſman is very ſkilful. As they are furniſhed with a foramen ovale, they can continue very long under water; but, whenever they grow weak, they ariſe to the top, in order to imbibe freſh air. They often ſwim on their backs, and ſo near the ſurface of the water, that their hinder-paws are frequently dry. When they firſt go into that element, they turn themſelves like a wheel, after the example of many other large ſea-animals; and, when they quit it, they faſten their fore-paws into the rocks, and thus draw up their bodies, which they can move but ſlowly in ſuch ſituations; though they are remarkably ſwift in their motions on plain ground.

The manner of catching theſe creatures, in Bering's Iſland, was thus: the natives firſt ſtruck out their eyes with ſtones, and then beat out their brains with clubs. But this buſineſs proved ſo difficult, that it required at leaſt three hundred ſtrokes; and though ſometimes their ſkulls were broken in pieces, and all their teeth beat out, they would ſtill keep their places, ſtand on their hinder paws, and endeavour to defend themſelves: one of them, thus treated, lived full two weeks. The people of Kamtſchatka kill them with harpoons: ſome, however, die through age, though much the greater number expire with wounds they receive in quarrels.

Cat, Flying. This animal appears to be a ſpecies of bat, having it's wings, both internally and externally, covered with fine ſoft hair of a reddiſh grey colour. The wings of one of theſe bats, when meaſured by Cluſius, were twenty-one inches long, and nine broad. The head reſembles that of a wild Cat; the ears are of a middling ſize; the eyes are large and ſhining; and the fore-feet, together with the tail, are united to the membraneous wings, inſomuch that every part of this creature aſſiſts it in flying. The breaſts of the female are large and round; the membranous wings ſeem to be dentated on the edges; but the interior ſurface is leſs downy, and not of ſo deep a yellow as the exterior.

In ſome of theſe animals, the ſnouth is obtuſe, and approximates to the ſhape of that of a Cat; and, in others, it is long and narrow, and greatly reſembles that of a fox. This animal delights in caverns and ſubterraneous retreats, where it lies hid during the winter; and, like the bat tribe, only flies abroad about the duſk of the evening.

Cat-Fish, Greater. This creature, which ſeems to be a ſpecies of ſhark, is by ſome naturaliſts called the dog-fiſh. The upper-ſide of the back is of a browniſh colour, variegated tranſverſely with broken irregular bars of a darkiſh colour; and the belly or under-ſide is white. There are faint indiſtinct lateral lines paſſing from the eyes to the tail. The noſtrils have ſlits which communicate with the mouth; and five openings on each ſide of the head form the gills. It has two ſingle fins on the back, one behind the other; and on the belly there are two pair of fins, between the hindermoſt of which the vent is placed. It has likewiſe a ſingle fin on it's under-ſide, near the tail; the tail-fin is of a peculiar formation; and all theſe members are furniſhed with duſky ſpots. This fiſh proceeds from an egg of a horny ſubſtance of a red-brown colour, ſhaped like a purſe, and flatted and edged on it's ſides. The ſkin of the Cat-Fiſh is ſenſibly rough to the touch; and the teeth, which are very ſharp, conſiſt of ſeveral rows, like thoſe of the ſhark. It is found on ſeveral of the Britiſh coaſts, and likewiſe near the Cape of Good Hope; whence we may conclude, that it is a general inhabitant of the ſeas both in the temperate and torrid zones.

Cat-Fish, Greatest. This fiſh differs from the former in being of an aſh-colour, in having larger and fewer ſpots, a longer and thicker ſnout, and noſtrils at a conſiderable diſtance from the mouth.

Cat, Sea. A fiſh of a very ſingular ſhape, with eyes extremely large in proportion to the body. The back is of a purple colour; the belly is blue, ſpotted with purple; and the tail is very broad. This fiſh is not furniſhed with any fins, except on the tail and the fore-part of the head; on which laſt there are ſeven, pointing directly forward like the feelers of ſhrimps. Another variety of this fiſh is of a ſtill more extraordinary figure. The back-part forms an oval lump, on which the head ſeems to hang; it has long large eyes; and a ſmooth ſkin inclining to blue on all parts of the body, except the belly, which is brown. The entrails contain a glutinous matter, of which the Chineſe make ink.

CATANODROMI. A term of the ſame ſignification with Anadromi, the diſtinctive name of a tribe of fiſhes which at times leave the freſh water for the ſalt, and afterwards return to the former again.

CATARACTA. A bird of the gannet kind, ſo called by Aldrovandus. It reſembles the wood-pigeon ſo exactly, that it can hardly be diſtinguiſhed from it, except by the inferiority of it's dimenſions. Indeed, Mr. Ray ſuſpects it to be ſame; and the rather, as it's deſcription was only taken from a picture.

CATARACTES. A name given by ſome authors to the large ſea-gull; called in Cornwall, in which county it is very common, the gannett.

CATCH-FLY. A tribe of birds common to almoſt every country in the known world; but the ſpecies are moſt numerous in the warmer climates, where the alternate extremes of heat and humidity are very favourable to the propagation of inſects, the uſual food of theſe birds. See Fly-Catcher.

CATERPILLAR. Every butterfly muſt paſs through the Caterpillar ſtate before it arrives at it's beauty and perfection; and, in the ſame manner, all the known winged animals, except the puceron, undergo a reptile ſtate, none of them being produced in a winged form.

For a deſcription of the common Caterpillars, which produce butterflies and moths, ſee the article BUTTERFLY.

CATERPILLAR, WATER. It may perhaps ſeem incredible to many, that Caterpillars ſhould be capable of exiſting entirely under water; but experience and obſervation prove to a demonſtration, that they not only live in that element, but that they devour aquatic plants in the ſame manner as their kindred tribes do land ones. Nor is the appellation given to theſe inſects an improper one, as is frequently the caſe with reſpect to larger aquatic animals; but they in every ſenſe juſtify their title, as they do not reſpire after the manner of the fiſh tribe, but by their ſtigmata, like other Caterpillars.

The penetrating Reaumur, in his obſervations, met with two ſpecies of theſe inſects; the one on the potamogiton, or pond-weed; and the other on the lenticula, or duck-meat. Both of theſe appeared to be very induſtrious animals; but the firſt being the largeſt, it's operations were diſtinguiſhed with greater facility than thoſe of the laſt. Though truely an aquatic animal, it ſwims but very indifferently, and ſeems rather averſe to the element in which it reſides.

The parent butterfly lays her eggs on a leaf of the potamogiton; and, as ſoon as the young Caterpillar is hatched, it gnaws out a piece of the leaf, of a roundiſh figure, which it carries to another part of the ſame leaf, and lays it in ſuch a manner that there may be an interſtice left in which it may lodge itſelf. It then affixes this fragment to the larger leaf, by means of ſilk of it's own ſpinning, only leaving a hole from which it can protrude it's head and conſume the ſurrounding leaves. Though this aperture is very ſmall, it eaſily diſengages itſelf, ſince a little exertion bends the upper as well as lower leaves, both being flexile; and, when the creature quits it's cell, it has a ſort of down which defends it from rain; and the natural elaſticity of the leaves and ſilk cloſe the aperture again, ſo that no water can penetrate. The leaves of this kind of plant are alſo very ſlippery, and reſiſt the wet in the ſame manner as if they were oiled. However, it ſoon happens that this habitation becomes too ſmall for the animal; in which caſe it forms another, and, at proper intervals, others adapted to it's ſize. The ſubſequent changes into the chryſalis and butterfly ſtates are effected in the uſual way. The butterfly quits it's laſt ſhell, which was placed on the ſurface of the water; and the lightneſs of the animal eaſily ſuſtains it on the liquid element till it's wings are dried, when it becomes a denizen of the ſky.

CATERPILLAR, WOOD. A genus of inſects living in a different manner from thoſe which ſubſiſt on leaves and plants; being concealed under the bark, roots, trunks, branches, and even fruits of trees. They are eaſily diſtinguiſhed from thoſe worms and maggots which are commonly found in roots and fruits, and owe their origin to a different kind of flies; but they are liable to be confounded with a ſpecies of animals, called by Reaumur falſe or baſtard Caterpillars, which very much reſemble the real Caterpillars, except that they have a greater number of legs, and are finally transformed into four-winged flies, which are different from the real butterflies.

The winged inſects which give birth to thoſe Caterpillars that live immured in trees or fruits, lay their eggs on the ſurface; and the young Caterpillars, as ſoon as hatched, begin to eat their way into the ſubſtance. But, what appears moſt ſingular, is, that there is uſually no more than one Caterpillar in a fruit, though it be large enough to afford food for ſeveral; and if two of theſe creatures are ſometimes found encloſed in it, one of them is commonly a Caterpillar, and the other an animal of ſome other kind. The reaſon of this ſeems to be, that the operation of penetrating into the fruit is ſo difficult to the young animal, that it ſeldom ſucceeds; and though the butterfly depoſits a great number of eggs on each fruit, and theſe are in general hatched, the rind is commonly too ſtrong for the inſect to perforate.

When once lodged in their priſon, theſe animals conſume the ſubſtance which incloſes them at their leiſure, leaving the outer ſhells uninjured; and this is frequently the caſe in grains of corn, where the mealy ſubſtance ſerves as aliment, and the exterior ſkins become firm coverings for the animals. The mealy ſubſtances, in this reſpect, uſually prove ſufficient for the animals in their Caterpillar ſtate; but ſhould they prove deficient, the creatures have recourſe to the very ſingular expedient of devouring their own excrements, and thus ſeparating nouriſhment from that very matter which had before paſſed off from their ſtomachs in an undigeſted ſtate.

Some Caterpillars of this kind quit their retreats, in order to change into their chryſalis, and thence into their butterfly ſtate; but the greater number remain there, and paſs through all their changes in confinement. Theſe Caterpillars, like all the other kinds, find very formidable and deſtructive enemies in a certain tribe of worms; and, on opening the excavated fruit, inſtead of the expected Caterpillar, it is not unuſual to find a fly juſt ready to ſally out, which has been produced from the chryſalis of a worm that had previouſly found it's way into the fruit, and devoured the Caterpillar, it's original inhabitant.

CATERPILLAR EATERS. A name given by ſome authors to a ſpecies of worms bred in the bodies of Caterpillars which devour their ſubſtance. Theſe worms originate from certain flies which depoſit their eggs in theſe animals; and after the uſual transformations, aſſume the parental form.

Reaumur, in his Hiſtory of Inſects, has given a very curious account of theſe little worms; to which he gives the name of the ichneumon of Caterpillars.

CATHETOPLATEUS. A term, with it's oppoſite, Plagiplateus, frequently uſed by Artedi, and others who have adopted his ſyſtem, in the deſcription of fiſhes: they are expreſſed in Engliſh by the two familiar words, Compreſſed and Depreſſed. The heads of fiſhes are the principal parts characterized by theſe diſtinctions.

CATOCYSTUS. The name of one of the general diviſions of the echinodermata, or ſea hedge-hogs, which have the aperture of the anus in ſome part of the baſe; whereas the anocyſti have it at the top of the ſhell.

For the more accurately diſtinguiſhing them into genera, the baſes of the ſhells are to be divided into regular, and irregular. The regular are thoſe which

which are round, or oval; and the irregular, thoſe which have ſinuſes or angles.

CATTLE. A collective term, importing all quadrupeds uſed either in tilling the ground or as food for the ſubſiſtence of mankind.

Under this term ſome naturaliſts include all quadrupeds of a gregarious nature, as ſheep, oxen, horſes, and hogs; while others define it to be all thoſe tame animals which feed on graſs.

Cattle, Black. A term frequently uſed to expreſs the cow kind; ſometimes alſo denominated neat cattle.

CATTUPHUS, or COSSOPHUS. An Ariſtotelian name for the fiſh called merula and turdus nigricans by the Latins. It is a ſpecies of the labrus, eaſily diſtinguiſhed from all others by it's colour, and called the blueiſh-black labrus by ſuch naturaliſts as acknowledge the generical name labrus.

CATULUS. A ſea-fiſh, of which authors deſcribe three ſpecies; viz. the major, the maximus, and the minimus. It is properly of the galeus kind; having a variegated ſkin; and a large wide mouth, furniſhed with ſtrong teeth, ſharp-edged, and hollowed inwardly. The firſt kind is common in the Britiſh ſeas, particularly on the coaſt of Cornwall; and the two others are generally found in the Mediterranean.

CATUS PARDUS. An American animal, called by ſome authors Catus montanus; and, in Engliſh, the mountain-cat. In the Linnæan ſyſtem, it is a ſpecies of the cat called felis pardalis. See Cat, Mountain.

CATUS ZIBETHICUS. A name ſometimes given to the animal which produces the perfume called civet.

CAVAGIRO. A Mediterranean fiſh ſhaped ſomewhat like the common eel, but thinner and more depreſſed.

CAVALLI-MARINI. A ſmall animal, about the length of a man's thumb, found on the ſea coaſt near Pozzuoli. The head bears ſome reſemblance to that of a horſe; and the body terminates in a tail like that of a ſhrimp. It is ſaid to be efficacious in encreaſing the milk of nurſes.

CAUDISONA VIPERA. A name given by ſome naturaliſts to the rattle-ſnake.

CAUDIVERBA. An animal of the lizard kind, called alſo wromaſtyx; but more commonly known among authors by the name of cordylus.

CAVIA COBAYA. A name given by the Brazilians, and ſeveral naturaliſts, to the creature commonly known among us by the appellation of the Guinea-pig.

CAURIS, or COWRIES. A genus of ſhells called by ſome conchologiſts porcellana, and concha venerea. From a falſe pronunciation of this word, theſe ſhells are ſometimes called gowries. See Porcelain Shell.

CAVY. A tribe of animals which have two cutting teeth in each jaw; four toes on the fore-feet, and three behind; ſhort ears; and very ſhort tails. They have a ſlow, creeping pace, are numerous breeders, and of courſe but ſhort lived.

Cavy, Common. This animal is called in England the Guinea-pig, becauſe it is ſuppoſed by the vulgar to come from that country; and, by Buffon, the Indian pig. It's ears are large, broad, and rounded at the ſides; it's upper-lip is half divided; and it's hair is erect, ſomewhat reſembling that of a young pig. It is of a white colour, or rather white varied with orange and black in irregular blotches. It has four toes on the fore-legs, and three on the hind; but it has no tail. It is a native of Brazil; but naturaliſts have furniſhed us with no account of it's habits in a ſtate of nature. It has been domeſticated in Europe; and is a reſtleſs, grunting little animal, continually running from place to place, and from corner to corner. It feeds on bread, vegetables, and grains. It is extremely prolific, breeding almoſt every two months, and bringing forth from four to twelve at a time: but numbers of the young are deſtroyed by cats; others are killed by the males; and the cold of this climate proves fatal to many more.

The fleſh of this animal is by ſome eſteemed delicious; but it rarely compoſes any part of the viands of the inhabitants of this country.

Cavy, Rock. This animal, which is about a foot long, has a divided upper lip; ſhort ears; four toes on the fore-feet, and three on the hind; and, like the common Cavy, is deſtitute of a tail. The upper part of the body is of the colour of the common hare; and the belly is white.

The Rock Cavy is a native of Brazil, and takes up it's reſidence in the holes of rocks. It's paces reſemble thoſe of a hare; it is hunted by little dogs; and it's fleſh is ſuperior in flavour to that of our rabbits.

Cavy, Patagonian. This ſpecies has long ears, much dilated near the bottom; the upper lip is divided; and on each ſide of the noſe there are tufts of ſoft hairs, and long whiſkers. The face, back, and fore-parts of the legs, are cinereous; the breaſt and ſides are tawny; the belly is of a dirty white; the rump is black; the legs are very long; the claws are ſtraight and black; and the tail is extremely ſhort.

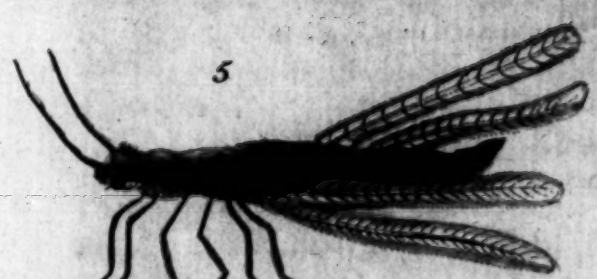
This animal, which grows to a conſiderable ſize, is found in great plenty near Port Deſire, in Patagonia. It burrows in the earth like the rabbit; and it's fleſh, which is of a ſnowy whiteneſs, has an excellent flavour.

Cavy, Spotted. This animal, which is about ten inches long, is formed like a pig; and is by ſome authors called the hog-rabbit. It has five toes on each foot, and only the mere rudiments of a tail. The upper jaw is longer than the lower; the ears are ſhort and naked; it has long whiſkers; the upper part of the body is of a dark brown colour; the ſides are marked lengthwiſe with lines of grey ſpots; and the belly is white.

This creature is found in Brazil and Guiana; and chiefly frequents fenny places, where it burrows under ground. It grunts like a pig, and bites ſeverely. It grows very fat; and in Brazil it is eſteemed a peculiar delicacy. According to Dampier, a variety of this ſpecies is found on the banks of the River St. Francis, entirely of a white colour.

Cavy, Long-Nosed. This animal, which is about the ſize of a rabbit, has a long noſe, a divided upper lip, ſhort rounded ears, and black eyes. The hair is hard and ſhining, compoſed of a mixture of red, brown, and black; being of a bright orange colour on the rump, and yellow on the belly. It has black ſlender legs, four toes on the fore-feet, three on the hind, and a ſhort naked tail.

This creature is alſo a native of Brazil and Guiana; and is a very voracious little animal. It grunts like a pig; and, reſting on it's hind-legs, holds it's food with it's fore-feet when it eats, and conceals what it cannot devour. It runs very faſt, it's motions reſembling thoſe of a hare. When purſued, it uſually takes ſhelter in a hollow-tree; and, when irritated,



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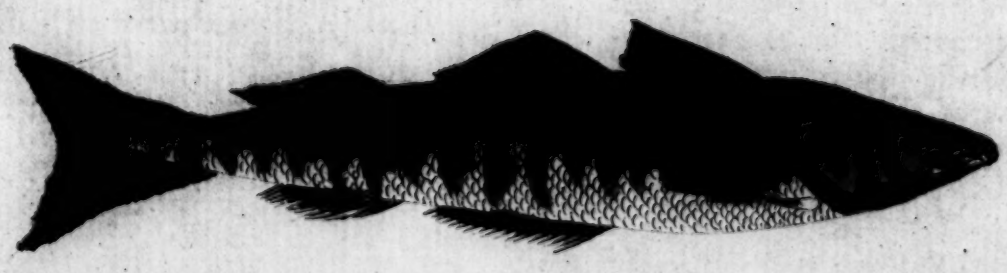

1. CENTIPEE. 2. CHAFFINCH. 3. CHARR. 4. CHATTERER. OF CAROLINA.

5. STRAW-COLOURED CHINCH. 6. TAWNY CHINCH. 7. CHUB. 8. COAL-FISH.

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irritated, it's hair briſtles on it's back, and it ſtrikes the ground with it's feet. It's fleſh is eaten by the inhabitants of South America, who eſteem it very palatable; and the animal is capable of being domeſticated, and rendered very tame.

There is alſo a leſs ſpecies than the preceding, of an orange-colour, which inhabits the ſame countries; and another found in Java and Sumatra, about the ſize of a hare, and of a reddiſh colour.

CAVY, CAPE. This animal, which is about ten inches long, has a thick head, full cheeks, and oval ears which are almoſt loſt in the fur. The head is of the colour of that of the hare; the top of the back is duſky, mixed with grey; the ſides and belly are of a whitiſh grey; and the ſhape of the body is thick and clumſy. There are four toes on the fore-feet, and three on the hind; and the tail is ſo ſhort that it can ſcarcely be perceived.

This creature inhabits the mountains near the Cape of Good Hope, burrows under ground like a rabbit, and it's fleſh is in high eſtimation among the inhabitants of that part of the world.

CAVY, MUSK. This animal is almoſt as large as a rabbit; the upper-part of it's body is black; and it's belly is entirely white. It inhabits Martinico, and the other Antilles iſlands; burrows under ground; and ſmells ſo ſtrongly of muſk, that it's retreat may be traced by the perfume.

CAVY, OLIVE. This ſmall animal is very obſcurely mentioned by naturaliſts; M. Barrere only informing us, that the colour is olive; and De Marchais, that it is eſteemed delicate food. It is found in Guiana, and the iſlands of St. Lucia and Grenada; and lives in the woods on various kinds of fruits. It appears to have a great averſion to water; it is eaſily tamed; and, when it cries, which is but ſeldom, it makes a noiſe like that of the Guinea-pig.

CAY. A ſmall Brazilian monkey of a deep black colour. It lives only in thick impervious woods; and uſually ſits on the branches of a particular kind of fruit-bearing treer, on the produce of which it ſubſiſts.

CAYMAN. A ſpecies of crocodile found in the ſouthern parts of America, and on the coaſt of Guinea; more uſually known among naturaliſts by it's Brazilian name Jacere.

Marcgrave aſſerts, that this animal has no tongue, but only a membrane lying even with the cavity of the lower-jaw, which however has the ſhape of a tongue, though it is incapable of elevation. This account agrees with what has been already advanced in the deſcription of the alligator or crocodile, which in fact are the ſame animals. The eyes of the Cayman are large and round, of a bright grey colour, with black pupils; the fore-legs are ſhorter and weaker than the hind ones; and there are five toes or fingers on each, three of which are armed with nails, but the two others have none. The hind legs have only four toes, the outermoſt of which has no nail.

La Condamine obſerves that, throughout the whole courſe of the river of the Amazons, Caymans or alligators are very common; that ſome of them meaſure twenty feet in length; that they lie whole days, and even nights, ſtretched out and motionleſs, inſomuch that thoſe who are unacquainted with thoſe animals might naturally enough miſtake them for the trunks of trees covered with a rough dry bark; that during inundations they ſometimes enter the cottages of the natives; and that there have been frequent inſtances of their even attempting to drag a man out of a canoe in the ſight of his companions, who have not been able to afford him any aſſiſtance.

CAYOPOLIN. An animal of the monkey kind, which bears a ſtrong reſemblance to the marmoſe, except that it's ſnout is more pointed, and it's tail longer in proportion. It is of an aſh-colour inclining to yellow, and is a native of the new world.

CEHOILOTI. A Mexican bird of the pigeon kind, covered with duſky feathers, except on the breaſt and the extremity of the wings, where they are generally of a paliſh white; and the irides are red.

CEIXUPEIRA. An American fiſh, eſteemed very fine and delicate food, though of an enormous ſize. It grows from nine to ten feet in length, and is as thick as a man's body; being of an oblong figure, with a flatted head. There are no teeth in the upper-jaw; but the mouth, which is ſmall in proportion to the ſize of the creature, is thick-ſet with ſmall tubercles. The back and ſides are black; the belly is of a fine bright white; and the fins are all black, except the ventral ones, which are white, with a border of black at their edges.

CENCHRAMUS. A term by which ſome naturaliſts expreſs the emberiza alba, called in England the bunting.

CENCHRIS. The name given by many authors to the keſtrel, or windhover, a ſpecies of hawk of the long-winged kind called the tinnunculus; and, in England, the ſtannel.

CENEONTLATOTI. An American bird deſcribed by Nieremberg, and called by that author avis polyglotta. It is celebrated for the agreeable modulations of it's voice; which, in point of melody, are ſaid to ſurpaſs thoſe of the nightingale.

CENOTZQUI. A bird mentioned by Nieremberg, called avis evocatrix nivis, becauſe it is always very clamorous before a fall of ſnow. It is very beautifully variegated; and is equally capable of enduring a warm or a cold climate, but ſhews a predilection for mountainous countries. It turns it's head round in every direction without moving it's body, ſo as to be capable of obſerving every object that approaches it with the greateſt facility.

There is another ſpecies of this bird, called by ſome authors liceto, and which differs from the former principally in the diſpoſition of it's colours.

CENTEPEE, or CENTIPES. An inſect ſo called from it's great number of feet; and, for the ſame reaſon, alſo termed millepedes by ſome, though improperly, becauſe that appellation is always beſtowed by naturaliſts on hog-lice. It is very common in many parts of the world, eſpecially between the tropics; and in the Weſt Indies there are ſeveral ſpecies, the bite of one of which frequently proves mortal.

This creature is ſomewhat longer than a human finger, and as thick as a gooſe-quill, but more flat, and of the colour of ruſty iron. It has a round head, with two ſmall but very ſharp teeth; and the whole body is divided into ten or twelve joints, and as many tranſverſe black lines, at the bottom of each of which there are two pretty long feet. There are two ſmall horns on the head, and the tail is forked. It is found principally among rotten wood. When touched, it is ſure to bite; the wound inflicted produces the ſame effects as the ſting of the ſcorpion; and the like remedies are applied in order to a cure.

CENTEPEE OF THE EAST INDIES. This ſpecies is about five or ſix inches long, of the thickneſs of a finger, and of a ruddy colour. It conſiſts of many joints and bones; and has two claws or pincers, with which it wounds as dangerouſly as the ſcorpion, and excites the moſt excruciating pain. It lurks in holes, and among old furniture; and is ſeldom ſeen abroad except when moleſted.

CENTEPEE OF THE CAPE OF GOOD HOPE. This creature is about three inches long, and half as thick as a finger. It is covered with hair, and appears to have no eyes; but there are two feelers on the head, which ſerve to direct it's motions. It is highly venomous, it's bite being equally as dangerous as that of the ſcorpion. An European mariner was bit by one of theſe inſects in ſuch a terrible manner that his life was ſuppoſed to be in danger; but, by the application of roaſted onions to the part affected, he ſoon recovered.

CENTEPEE, AFRICAN. This ſpecies is four inches and a half long, and as thick as a ſwan's quill. The colour of the whole body is of a ſhining browniſh black; and to each diviſion or inciſure belongs a ſpot of a yellowiſh colour, ſixty of which are arranged on each ſide. It is aſſerted by ſome authors, that though this inſect be ſevered into two parts, both will continue in a ſtate of animation. When irritated, it bites ſo very fiercely, as to wound the hand even through a thick glove. It has a forked mouth; and two feelers, for the purpoſe of warning it of approaching danger, as well as aſſiſting it in procuring it's neceſſary aliment.

CENTEPEE, AMERICAN. This inſect has a flame-coloured line running down it's back; and it's ſides reſemble braſs. It has a vaſt number of feet, as ſmall as hairs; an exceedingly ſmall head; and, from it's moving with equal facility either backwards or forwards, it has been ſuppoſed to have two heads.

A variety of this kind, brought from Cape Auguſta, was ſomewhat larger than the former; and had ſeventy livid diviſions or inciſures, and twice as many feet.

CENTEPEE, COMMON. This ſpecies is found in Great Britain. It is about an inch long; it's body is flat, thin, and of a browniſh colour; and it's legs are ſhort and yellowiſh.

CENTEPEE WITH THIRTY LEGS. This animal is not more than half an inch long, nor thicker than a wheat-ſtraw. It is flat, and of a red colour; and it's laſt pair of legs, which are very long, give it the appearance of having a forked tail.

Linnæus mentions only three ſorts of Centepees; that with ſeventy feet on each ſide, that with twenty, and that with fifteen.

CENTRINE. A name given by ſome naturaliſts to the porcus piſcis. It is properly of the galeus kind, but much thicker and ſhorter than any of that genus; and, from the head to the tail, is ſomewhat of a triangular figure; it's broad and flat belly forming one ſide of a triangle; and it's two ſides, which unite at the back, the other two. This animal derives the name porcus piſcis either from the ſhape of it's back, which, riſing into a ridge, reſembles that of a hog; or from it's being fond of wallowing in mud, after the manner of ſwine.

CENTRINES. A ſpecies of inſects hatched in wild fig-trees.

CENTRISCUS. A genus of the order of nantes in the claſs of amphibia; the characters of which are, that the head is protracted into a very narrow beak; that the aperture is recurved; that the abdomen is carinated; and that the belly-fins are united.

CENTRONIA. A name by which modern naturaliſts have diſtinguiſhed the echini marini. Dr. Hill makes them a diſtinct ſeries of animals, living under the defence of ſhelly coverings, each formed of one piece; and furniſhed with a vaſt number of ſpines, all moveable at the creatures pleaſure.

The ſpecies of Centronia, though very numerous, may all be comprehended under the following general diviſions: the roundiſh or ſubgloboſe kind, called by Klein cidaris; the cordated kind, called by that author ſpattangi and ſpatagoides; and the flat kind, called by him placentæ.

The above celebrated naturaliſt, who has ſhewn a conſiderable ſhare of ingenuity in the arrangement, has divided theſe animals into a number of other genera; but they may be all ranked under one or other of the aforeſaid diviſions. Beſides the known recent ſpecies, many are found in a foſſile ſtate of a very ſingular figure.

CEOAN. A bird common in the Spaniſh Weſt Indies, and deſcribed by Nieremberg, who calls it avis nivea. It is ſomewhat larger than the European thruſh; and is very remarkable for the facility with which it learns to imitate the human voice.

CEPHALUS. An Ariſtotelian name, applicable to the mugil or mullet; called by other authors capito.

Cephalus is alſo a name given by ſome naturaliſts to the ſargus, called alſo gardo, and gardon; a fiſh ſcarcely diſtinguiſhable from the roach.

CEPHUS. The ancient name of a ſpecies of monkey known among moderns by that of mona. It is diſtinguiſhed by it's colour, which is variegated with black and red; and it's tail is of an aſh-colour, with two white ſpots on each ſide at it's inſertion. It is a native of the northern parts of Africa.

The term Cephus is alſo applied to a bird deſcribed by Aldrovandus as reſembling the gull in it's bill, feet, and legs; but, in other reſpects, approaching nearer to the duck kind. It is about thirteen inches and a half long from the tip of the bill to the extremity of the tail; and is covered with ſuch an abundance of feathers, that it appears larger than it really is. The bill is of a moderate ſize, of a fleſh-colour, ruddy on the ſides, and black at the extremity. The irides are whitiſh; and the head, as well as the under-parts, are covered with white, brown, and yellow ſpots. The wings are blackiſh, with ſome yellow feathers at their tips; the greater tail-feathers are alſo blackiſh; the legs and thighs are of a green hue; but the feet and membranes between the toes are brown.

CEPOLA. A genus of the thoracici, in the claſs of fiſhes; the characters of which are, that the head is roundiſh and compreſſed; that the mouth is flat; that the teeth are crooked; that the branchioſtegious membrane conſiſts of ſix ſmall bones; that the body is uniform and naked; and that the abdomen is ſcarcely as long as the head.

CEPULA. A name given by Geſner, and ſome other naturaliſts, to the common tænia. The term is derived from the Italian *cepole*, the vulgar name of the fiſh in the markets of Rome. It is a ſpecies of the cepola.

CEPUS. An appellation given by ſome naturaliſts to thoſe ſmaller kinds of monkies which have a mixture of green in their other colours.

CERAMBYX. The claſſical name for a kind of beetle.

CERASTES. A ſpecies of ſerpent called in England the horned ſnake, having two protuberances on it's forehead like ſhells, but of a more ſolid texture: theſe horns are frequently not larger than barley-corns. The teeth are like thoſe of the viper, and placed in the ſame order. This animal, which partakes of the nature of viviparous ſerpents, is remarkable for it's almoſt total abſtinence from water. It is found in Lybia; and alſo in Arabia, particularly near the town of Suez.

Ceraſtes is alſo a name given by the ancient Greeks to a ſtag arrived at it's full growth, or at the end of it's fourth year.

CERCOPITHECUS. A ſpecies of long-tailed monkies. Aldrovandus, Marcgrave, and other authors, have given the figure and hiſtory of many of the Cercopitheci; and the former mentions ſome as large as maſtiff-dogs, having tails five cubits long. In Brazil there is a yellowiſh ſpecies, which ſmells of muſk.

Theſe monkies, when in danger of falling from trees, ſave themſelves not only by their feet, but alſo by their tails, which they wrap round the boughs. The nation of the Zygantes, in Africa, eſteem their fleſh proper for food.

CEREBRUM JOVIS. A name given by the ancient poet Ennius to a peculiar fiſh of the labrus kind, called ſcarus by the generality of authors. It is diſtinguiſhed by Artedi from the other ſpecies of the ſame genus by the name of the labrus, the ſcarus of naturaliſts.

CERIGO. An appellation given by many authors to that ſingular American animal called the opoſſum. The Americans, in ſome parts of the continent, call this creature carigueya; and it is probable that the name Cerigo is only a corruption of that word, though it is generally received as a proper name, and uſed as ſuch by Maffei, Barlæus, and Nieremberg.

CERNUA. A ſmall freſh-water fiſh, called by authors the aurata, aſpredo, and perca minor; and, in Engliſh, the ruffe. It is nearly of the ſhape and figure of the common perch; but, when arrived at it's full growth, ſeldom exceeds ſix inches: it differs alſo from that fiſh in being deſtitute of thoſe black tranſverſe lines with which the back and ſides of the common perch are variegated. It is caught in many of our rivers, particularly in the Yare, at Norwich.

CERRUS. An appellation given by Pliny, and other ancient writers, to the fiſh called by the generality of naturaliſts ſmaris, and mæna candida. It is of the ſparus kind, according to the Artedian ſyſtem; and diſtinguiſhed from the other fiſhes of that genus by it's having a black ſpot in the middle of each ſide, and in the pectoral fins and tail being red.

CERVUS VOLANS. The claſſical name for the ſtag-fly, or ſtag-horned beetle; a very large ſpecies of ſcharabæus, with ſloping horns, ſomewhat like thoſe of the ſtag. It is of a blackiſh colour; but the horns have ſometimes a purpliſh caſt, and in ſome few they have been found of the colour of red coral. This inſect, when at it's full growth, is an inch and a half long.

The ſtag-beetle is commonly ſeen in Eſſex, and a few other counties of England. But, beſides this ſpecies, there is another produced from a hexapode worm, of a deeper black than the former, the horns of which ſend forth only one branch.

CERYX. A name by which Pliny, and other ancient writers, have denominated the three genera of ſhell-fiſh ſince diſtinguiſhed under the names of buccinum, purpura, and murex.

CESTREUS. A fiſh of the mullet kind, but whoſe head is much ſmaller and narrower; and the ſides are variegated with ſhorter longitudinal lines. It is caught in moſt places; but it's fleſh is eſteemed greatly inferior to that of the mullet.

CETACEOUS FISHES. A term generally denoting all ſuch large ſea-fiſhes and beaſts as reſemble the whale. However, in a proper ſenſe, the word Cetaceous denotes only thoſe large fiſh which are viviparous, or bring forth their young alive; that have no gills, but reſpire through lungs like quadrupeds; which have but one pair of fins; and that ſuckle their young.

Theſe animals ſcarcely differ from quadrupeds, except in the circumſtance of their having no feet. They have no air-bladders; but are enabled, by means of the air received into their lungs in reſpiration, to render their bodies equiponderant to water.

In the ordinary acceptation of the term, Cetaceous is applied to all fiſh of the larger kinds, called by the Latins belluæ marinæ, or ſea-beaſts. In this reſpect, Cetaceous Fiſhes are divided into greater, including the whale kind properly ſo called; and leſſer, to which belong the porpoiſe, ſhark, dog-fiſh, and many others; but theſe laſt are more properly termed cartilaginous fiſhes.

CETUS. See WHALE.

CHÆRUS. A name given by Strabo, and ſome other ancient authors, to the fiſh called capriſcus by the moderns. See GOAT-FISH.

CHÆTIA. A ſpecies of inſects of the apteria kind, without any viſible limbs. The Chætia reſembles a hair, or rather a piece of fine thread; it's ſurface is ſmooth; and it's body rounded, and very ſlender. In England it is called the hair-worm.

CHÆTODON. A genus of the acanthopterygious or thoracic fiſhes; the characters of which are the following: the branchioſtegious membrane on each ſide contains five or ſix ſmall bones; the body is compreſſed, thin, and ſhort; the back has but one fin, which reaches it's whole length; the tail is large, and, excluſive of it, there are ſix other fins; the mouth is ſmall; and the lips may be opened and extended, though, naturally, they cover a part of the teeth; the teeth in the jaws are oblong, contiguous to each other, and flexile; the ſcales are rough; and the eyes are not covered with the ſkin of the head.

CHAFFER. A ſort of beetle.

CHAFFINCH. A ſpecies of the fringilla, a well-known bird, which begins it's ſong early in the ſpring; but, towards the cloſe of ſummer, aſſumes a chirping note. It may be properly termed a native of Great Britain, as both ſexes continue in this country during the whole year: but, what is very remarkable, the females migrate in flocks from Sweden to Holland in the month of September; and in the ſpring return to their mates.

This bird builds it's neſt almoſt of the ſame materials as the goldfinch, except that the inſide has the addition of ſome large feathers, and lays four or five eggs, of a dull white colour, tinged with deep purple. The feathers on the forehead are black; the bill is of a pale blue, with a black tip; the crown of the head, as well as the hind-part and ſides of the neck, are of a blueiſh grey; the ſpace above

above the eyes, the cheeks, the throat, and the fore-part of the neck, are red; the ſides and belly are white, tinged with red; the upper part of the back is of a deep tawny colour; and the lower part, together with the rump, are green. The coverts on the ridge of the wing are black and grey; the baſtard-wing and the firſt greater coverts are black; and the reſt are tipped with white. The quill-feathers are black; their exterior ſides are edged with pale yellow; and their inner and outer webs are white on the lower part. The tail is black, except the exterior feather, which is marked obliquely with a white line from top to bottom; and the legs are duſky.

The colours of the female are very dull, and ſhe is entirely deſtitute of the beautiful red which is found on the breaſt of the male. The head, and the upper part of the body, are of a dirty green; the belly and breaſt are of a dirty white; but the wings and tail are marked like thoſe of the male.

As Chaffinches are naturally very hardy, they may be taken from their neſts when about ten days old, and brought up with facility; and, during the months of June and July, the young flight may be eaſily caught in nets near the watering places they frequent. Some bird-fanciers cruelly deprive theſe inoffenſive animals of their ſight, by thruſting red-hot wires into their eyes; but this barbarous practice, whatever purpoſe it may anſwer, is ſurely diſgraceful to humanity.

CHALCHUS. A Grecian name for the fiſh uſually called the doree. It ſeems to have obtained both names from it's colour; the one from the word Chalchos, Braſs; and the other from Doreé, Gilded.

CHALCIDICA. A ſpecies of ſerpent ſo called from the reſemblance of it's colour to the chalcedony. It's bite is ſucceeded by a pellucid tumour, with a ſhining blackneſs at the margin. According to Paulus Ægineta, it cures it's own venom, drank in wine. It is ſometimes called ſeps.

CHALCIS. A name given by ſome authors to the pilchard; and called by others celerinus and apua membras.

CHALCOMUIA. A ſpecies of fly whoſe wings have the effulgence of poliſhed braſs. It is an inſect of the carnivorous kind, and feeds on other flies, beetles, and even dead ſerpents: whence it has been alſo called by ſome ophioborus; and, by others, heſycius.

CHAMA. A genus of large bivalve ſhells; the characters of which are theſe: they are commonly ſmooth, though in ſome places a little rugoſe; and, in a few ſpecies, there are numerous ſpines. The valves of the ſhell are equal, elate, and convex; and the mouth gapes, as in the oyſter.

The incloſed animals have all of them a hot pungent taſte, and inflame the mouth to a very great degree. From this circumſtance the French have given them the name of flames and flammets; and, in ſome provinces of their country, they are called lavignons and pelourdes.

The ancients engraved a diverſity of figures on the various ſpecies of this ſhell; and, conformably to their fancy, they could give the diſtinct parts of the imprinted figure the colours of the ſeveral coats of the ſhell by the depth of the inciſion: thus they could impart to human fleſh it's natural white; and to the dreſs a blue or yellow tinge, according to the nature of the ſpecies of Chama on which the work was performed. Several of theſe antique works are ſtill extant; and probably this was the firſt invention of that ſort of engraved gem called camea.

CHAMELEIA. An appellation given by ſome naturaliſts to a peculiar ſpecies of chama; but generally applicable to ſuch of them as have ſmooth ſurfaces, of which there are a great number.

CHAMOIS. An animal of the goat kind, known among naturaliſts by the name of rupicapra. It has ſlender, black, upright horns, hooked at their extremities, and behind each there is a large orifice in the ſkin, ſuppoſed by ſome for the purpoſe of reſpiration; but there is not the ſmalleſt foundation for this opinion, as it is well known that there is no perforation through the ſkull, nor are there any ducts diſcoverable from theſe orifices. The forehead is brown; the cheeks, chin, and throat, are white; the belly is yellowiſh; and the reſt of the body is of a deep brown colour. The hair is long; the tail is ſhort; and the hoofs are much divided like thoſe of the reſt of the goat kind.

This animal inhabits the Alps of Dauphinè, Switzerland, and Italy; the Pyrænean mountains; the mountains of Caucaſus and Taurus; and the countries of Greece and Crete. It generally feeds before the ſun riſes, and after it ſets; and during the winter conceals itſelf in the clefts of rocks, ino rder to avoid the falls of the Avelenches. At that ſeaſon it ſubſiſts either on the tender twigs of trees, or on the roots of plants or herbs, for which it digs under the ſnow. Theſe creatures are equally timid and vigilant: each herd has it's leader, which ſtands as centinel on ſome eminence while the reſt are collecting their food; and, on the firſt diſcovery of an enemy, it alarms the whole troop by a kind of hiſs, who inſtantly ſeek protection in flight.

Theſe animals have very piercing eyes, and their ſenſes of hearing and ſmelling are exceedingly quick and ſtrong. They are alſo exceſſively ſwift and active; and the purſuit of them is a very laborious employment, as they can only be overcome by ſurprize. They are hunted principally for their ſkins; and their fleſh is by no means deſpicable food. In their ſtomachs there is often found a hairy ball, covered with a hard cruſt of an oblong form. They live to a great age; and bring forth two, and ſometimes three, at a time.

CH'ANCERONS. The French name of a ſmall caterpillar which deſtroys an immenſe quantity of corn in their granaries. The butterfly which produces this noxious inſect has white wings marked with black ſpots. The caterpillar, when firſt hatched, is one of the ſmalleſt with which naturaliſts are acquainted. It ſpins a vaſt number of fine threads as ſoon as emancipated from the egg, by which it attaches itſelf to whatever objects are moſt contiguous. Towards the end of ſummer, theſe caterpillars quit the corn, and mount up the walls of the granaries, in order to ſearch for proper retreats; which when they have found, they enter, cover their whole bodies with webs of ſilk of their own ſpinning, and in due time aſſume their aurelia form. In this ſtate they remain the whole winter, ſeemingly without either life or motion; but, in the months of April and May, the butterflies are hatched from them; and the males and females then coupling together, the latter immediately lay their eggs, and thus give riſe to a new progeny, which, during the ſummer ſeaſon, conſume the corn under the form of caterpillars. The female protrudes a kind of tube from her tail, by means of which ſhe forces her way into the grain, and lodges her egg, which in the ſpace of fifteen or ſixteen days is hatched into a caterpillar; and no ſooner does it aſſume this form, than it begins to devour the corn with the utmoſt

utmoſt avidity, and ſoon marks it's ſituation by the quantity of huſks which it ſtrews all around it.

CHANE. An Ariſtotelian appellation for the fiſh called by other authors hiatula, chauna, and chaunus. It is a genuine ſpecies of the labrus; and is diſtinguiſhed by Artedi under the name of the fork-tailed labrus with the lower jaw longer than the upper, and with black tranſverſe lateral lines.

CHANNA. A Mediterranean fiſh very like the ſea-perches, among which it is frequently expoſed to ſale in the Italian markets.

It is ſaid that, among all fiſh of this kind which have been examined by naturaliſts ever ſince Ariſtotle's time, none but females have been found. Whether this aſſertion be true or falſe, it is perhaps very difficult to determine; and, ſhould it be proved in the affirmative, the only concluſion which could be drawn from it is this, that the Channa is no diſtinct ſpecies, but only the female of ſome other fiſh.

CHANNADELLA. A name given by Bellonius, and ſome other authors, to a ſpecies of the labrus, called alſo ſachettus, and hepatus piſcis.

CHAR. This fiſh inhabits the lakes of the north, as well as thoſe of the moſt mountainous parts of Europe. It ſhews a ſtrong predilection for clear and pure waters; and is ſeldom known to wander into running ſtreams, except their bottoms are ſimilar to thoſe of it's native lakes. It is found in great abundance in the cold bodies of water on the ſummits of the Lapland Alps; and is almoſt the only fiſh which is met with in any plenty in thoſe inhoſpitable regions. There are but few lakes in Great Britain which produce this curious fiſh; and, even where the breed is preſerved, it never becomes numerous. It is found in Winander Mere, in Weſtmorland; in Llyn Quellyn, near the foot of Snowdon, in Wales; and in Loch Inch, and other neighbouring lakes, in Scotland; but whether it is found in Ireland or not, we are not competent to determine. Mention has been made by naturaliſts of the caſe Char, the red Char, the ſilver or gilt Char, and the gelt Char; but, on a cloſe examination of each variety, it has been impoſſible to diſcover any ſpecific difference ſufficient to conſtitute ſo many diſtinct ſpecies.

The body of the Char is longer and more ſlender than that of the trout; the back is of an olive colour, ſpeckled with whitiſh ſpots; the belly is generally red, eſpecially in the females; the ſcales are very ſmall; and the lateral lines are ſtraight. The mouth is wide; the jaws are nearly equal; the lower parts of the fins are of a vermilion dye; and the gills are quadruple. The Char is furniſhed with teeth both in the jaws and on the tongue, and in the upper-jaw it has a double row. This fiſh is very ſcarce, and it's fleſh is ſoft and tender; on both which accounts it is in high eſtimation.

CHAR, GELT, OR BARREN CHAR. This ſpecies differs principally from the former in not having ſpawned the preceding ſeaſon. It is more ſlender than the red Char; the back is of a gloſſy hue; the ſides are ſilvery, mixed with blue; the belly is ſpotted with pale red; the ſides of the belly are of a pale red; and the middle is white. This variety is found only in thoſe lakes which are inhabited by the red Char.

CHARADRIUS. The name by which Geſner and Aldrovandus have called the œdicnemus, a bird known in England by the title of the ſtone curlew. The term Charadrius is alſo applicable, in the Linnæan ſyſtem of zoology, to a diſtinct genus of birds of the order of grallæ: the diſtinguiſhing characters of which are; that the feet have each three toes, that the point of the bill is cylindrical and obtuſe, and that the noſtrils are linear. There are twelve ſpecies of this genus.

CHARAX. An appellation given by ſeveral Greek writers to the fiſh called caraſſius by the moderns. It is properly a ſpecies of cyprinus, and uſually diſtinguiſhed by the name of the cyprinus with twenty rays in the back fin and the lateral line ſtraight.

CHARMA. A ſea-fiſh which agrees in many particulars of it's conformation with the ſea-wolf. The lower jaw is longer than the upper, and gives the mouth the appearance of being always open. The teeth are ſharp; the eyes are ſmall; and the back is of a blackiſh red. The lines which run from the head to the tail are reddiſh; and the tail is ſprinkled with red ſpots, as well as the fin behind the vent, which runs to the tail.

CHAT-PARD. An animal of the leopard kind; which, when diſſected by the French academicians, diſcloſed to view a defect in the ſpermatic veſſels, and other parts abſolutely neceſſary to generation; nor did this imperfection appear to be either the effect of caſtration or of accident. See PARDUS.

CHATTERER. A genus of birds of which only two ſpecies have as yet been deſcribed by naturaliſts.

CHATTERER OF BOHEMIA. This bird ſometimes viſits England; and about the month of February it is annually ſeen in Scotland, in the vicinity of Edinburgh, feeding on the berries of the mountain-aſh; and alſo as far ſouth as Northumberland, where it ſubſiſts on the berries of the white-thorn. But the native country of the Chatterers is Bohemia, from whence they wander over Europe; and were formerly regarded by the ſuperſtitious of ſome countries as the certain preſages of a peſtilence. Theſe birds are gregarious; they feed on grapes in thoſe places where vines are cultivated; their fleſh is eſteemed as highly delicious; and they are eaſily tamed.

The length of the Bohemian Chatterer is about eight inches; the bill is ſhort, thick, and black; the baſe is covered with black briſtles; and from thence a black bar paſſes to the hind-part of the head over each eye. The head is adorned with a ſharp-pointed creſt, which reclines backwards; the irides are of a bright ruby colour; the cheeks are tawny; and the throat, which is black, has a ſmall briſtly tuft in the middle. The head, creſt, and back, are aſh-coloured mixed with red; the breaſt and belly are a pale cheſnut daſhed with a vinous caſt; the vent-feathers are a bright bay; the lower part of the tail is black, the end being of a rich yellow; and the feet are alſo black. The leſſer coverts of the wings are brown, and the greater are black tipped with white. The quill-feathers are black, the three firſt being tipped with white; and the ſix ſucceeding ones have half an inch of their exterior margin edged with a vivid yellow, and their interior with white. The horny appendages proceeding from the tips of ſeven of the ſecondary feathers, which have the colour and gloſs of the fineſt red ſealing-wax, diſtinguiſh this bird from all others; and the mark of diſtinction between the male and the female is, that the latter wants the yellow margins to the wings.

CHATTERER OF CAROLINA. This bird is ſcarcely ſeven inches long from the tip of the bill

to the extremity of the tail. The bill is ſhort, a little arched on the top of the upper mandible, and of a blackiſh colour; and round it's baſe there are ſmall black feathers which form a bar reaching beyond the eyes. This bar is bordered with white both above and below the eyes; and on the top of the head there are ſeveral long feathers compoſing a creſt, which the bird is capable of erecting or depreſſing at pleaſure. The head and neck are of a reddiſh-brown colour; the breaſt is whitiſh; the belly and thighs are of a pale yellow; the covert-feathers beneath the tail are of a light colour; and the back is of a dark brown. The rump, as well as the covert-feathers on the upper-ſide of the tail, are of a light aſh-colour; the wings on the upper-ſide are cinereous; but the greater quill-feathers are of a darker hue than the reſt, though the margins of the exterior webs are of a light aſh-colour. The inner webs of the three interior quills on each wing next the back are white to the tips; and ſeven or eight of the middle quills of each wing have ſmall oblong unctuous ſubſtances depending from them, not unlike red ſealing-wax both in colour and conſiſtence. The tail is of a dark aſh-colour, the tips of the feathers being of a fine golden yellow; and the legs, feet, and claws, are black, and of the uſual conformation.

The hens of this ſpecies are leſs vivid in their colours than the cocks, and are deſtitute of the red appendages at the tips of their wing-feathers.

CHAYQUARONA. The Portugueſe name for a fiſh of the turdus kind, caught on the Brazilian ſhores; more frequently called by it's native appellation, piraumbu.

CHEGOE. An American inſect, called chique by the French, and negas by the Spaniards. It is very ſmall, of a black colour, and generally found among aſhes and other filth. It penetrates through the ſtockings with facility, and generally lodges itſelf under the toe-nail, and the more prominent parts of the ſkin. At firſt it produces a pain ſomewhat ſimilar to the bite of a flea, and afterwards eats the fleſh ſo gently as only to occaſion a ſlight itching; but by degrees this creature grows bigger, till at length it becomes of the ſize of a large pea, when it produces nits which lodge round the parent inſect; and, if proper care be not taken, they increaſe ſo prodigiouſly, that a putrefaction of the ſurrounding fleſh enſues, which produces malignant ulcers, and ſometimes gangrenes.

Theſe inſects not only infeſt the human ſpecies, but alſo monkies, cats, and dogs. The moſt effectual way to prevent their attacks, is to wear thick ſtockings; and to bathe the feet often, particularly in ſea-water.

CHELIDON. An appellation given by many of the ancient Greeks to a kind of flying-fiſh, called by ſome authors milvus and hirundo; and, by others, accipiter, or the hawk-fiſh. It is properly a ſpecies of the trigla; and is diſtinguiſhed by Artedi under the name of the trigla with the head a little aculeated, and a ſingular member near the pectoral fins. This method of reducing fiſh to their true genera, and diſtinguiſhing them by their proper ſpecific names, ſeems to be the moſt effectual way of acquiring a perfect knowledge of them. The arbitrary names of milvus and hirundo convey ſo imperfect an idea of the particular fiſh, that they might be as well applied to one ſpecies as another; and accordingly we find two or three different ſorts of the trigla denoted by the inconcluſive name of milvus.

CHELIDONIUS. The name of a certain fly, which ſome authors call the ſwallow-fly on account of it's velocity in flight. It is generally of a brown colour, with black prominent ſhoulders, a black head, and ſhort black antennæ. The wings are ſilvery, and edged with black. It often continues for a conſiderable time on the leaves of plants; but, being very quick-ſighted, it avoids every hoſtile approach; and, from the length of it's flights, is not eaſily caught.

CHELON. A fiſh of the mullet kind, which ſtrongly reſembles the common mullet in it's general ſhape, but it's eyes are more prominent, and it's head is ſmaller. It has alſo two ſide-lines running from the head to the tail, very evenly ranged, and placed at equal diſtances; and it's lips are remarkably thick and prominent.

CHERMES. A genus of four-winged inſects, the characters of which are, that the roſtrum or beak is ſituated under the breaſt; that the abdomen is mucronated or pointed at the hinder extremity; and that the legs are formed for leaping.

Theſe inſects, which are in Engliſh called bugs, derive their particular diſtinctions from the plants or trees on which they feed. Linnæus enumerates eight ſorts; namely, that of the elm, the maple, the beech, the elder, the fir, the willow, the aſh, and the nettle. Beſides theſe, he mentions another ſpecies, which is ſuppoſed to breed in the head of the ceraſtes, or horned ſerpent.

CHERSYDRUS. An amphibious ſerpent, ſo called from it's living at firſt in watery places, whence it receives the name of hydrus; after which it ſhifts it's habitation, and remains on dry ground, and from thence it derives it's compound appellation of Cherſydrus.

CHEVALIER. A bird called by ſome Engliſh naturaliſts the horſeman, of which there are ſeveral ſpecies. It is about the ſize of a pigeon, and extremely well feathered. The bill is long, reddiſh near the point, and black near the baſe; and the head and legs are wholly black. The neck, back, and breaſt, are white; but the remainder of the upper-part is black. The wings are blackiſh, and have a white tranſverſe line on each ſide. It is called the Chevalier, or horſeman, becauſe it ſtands high on it's legs; and ſome fanciful authors have ſuppoſed that this circumſtance gives it the appearance of being mounted on horſeback. It frequents lakes, meadows, and the margins of rivers, and wades into the water as high as the thighs. It's fleſh is very delicate, and well flavoured. In ſome countries this bird is called crex, on account of it's voice, which ſeems to expreſs that ſyllable; but it is never ſeen in England.

Chevalier, Red, or Bellonius. The feet of this ſpecies are of a yelloviſh-red colour; the bill is ſhort; the head and neck are of a dark aſh-colour; and over the eyes there is a white line. The feathers under the wings are cinereous; and on each ſide of the temples there are two black ſpots.

Chevalier, Red-Legged. This bird is ſometimes ſeen in this country, but not very frequently. It derives it's name from the colour of it's legs, which are of a bright red. The top of the head and the neck are of a fine light brown; the bill is ſlender, near two inches long, of a reddiſh colour at the baſe, and black at the extremity. The covert-feathers in the middle of the wings are black, but within two inches of the end of the tail they are brown, edged with white. This ſpecies meaſures near eighteen inches from the point of the bill

to the end of the claws; and the breadth, when the wings are extended, is two feet.

CHEVIN. A name uſed in ſome parts of England for the capito, or chub.

CHEVROTIN. A beautiful animal, ſometimes called the Guinea-deer, the leaſt of all cloven-footed quadrupeds, and perhaps the moſt elegant. It's legs, at their ſmalleſt parts, are not much thicker than the ſhank of a tobacco-pipe. It is about ſeven inches high, and about twelve from the point of the noſe to the inſertion of the tail; and of a moſt delicate ſhape, being compleatly formed like a ſtag in miniature, except that it's horns, when it has any, are more of the garelle or antelope kind, being hollow and annulated after the ſame manner. It has two canine teeth in the upper-jaw; in which reſpect it differs from all other animals of the goat and deer kind, and thus makes a diſtinct genus of itſelf. The colour of this ſingular animal is no leſs pleaſing than it's conformation; the hair, which is ſhort and gloſſy, being in ſome of a beautiful yellow, except on the neck and belly, where it is white.

Theſe animals are natives of India, Guinea, and the warm climates between the tropics. They are amazingly ſwift; nevertheleſs, the negroes often overtake them, and knock them down with their ſticks. They are eaſily tamed, and ſoon become very familiar and agreeable; but ſuch is the delicacy of their conſtitutions, that they cannot exiſt except in the hotteſt climates. The males of the Guinea ſort are furniſhed with horns; but the females are deſtitute of them, as well as all the varieties to be found either in Java or Ceylon, where they chiefly abound.

CHICKEN. The young of the gallinaceous order of birds, and eſpecially of the common hen.

CHICUATLI. The Indian name of a bird deſcribed by Nieremberg, and by him called noctua canora. It's beak is long, black, and ſlender; and it's head is marked with undulated ſtreaks of yellow near the eyes. The breaſt and belly are whitiſh; it has ſome black feathers intermixed with white on the throat; and the back is variegated with black, yellow, and grey.

It principally frequents mountains, where it runs on the ground, unleſs alarmed by ſome approaching danger. It is eaſily bred, and almoſt every kind of food agrees with it. In the hotter climates this bird is very plentiful; and it's fleſh is generally fat and nutritive.

CHIEPA. A name given by ſome authors to the fiſh more generally called alauſa, and known in England by the appellation of the ſhad, or the mother of herrings.

CHIMPANZEE. An Angolan animal of the ape kind, a variety of the ourang-outang, or great ape, very nearly approaching to the human figure, but of a fierce and malicious diſpoſition. About forty years ſince, one of theſe creatures was imported into England by the captain of a ſhip in the Guinea trade. It was of the female ſex, and about two feet four inches high; it naturally walked erect, was hairy on ſome parts of it's body and limbs, and very ſtrong and muſcular. It was ſatisfied with the coarſeſt food; but ſhewed a peculiar fondneſs for tea, which it drank out of a cup and ſaucer in the uſual manner. It ſlept like the human ſpecies; and uttered ſome inarticulate ſounds, in imitation of the human voice.

The male of this ſpecies is very bold, and will venture to attack an armed man. It is ſaid that they often ſeize on the negro women in the woods, and force them into their horrid embraces. The creature which was exhibited in England was only twenty months old, and very tame. The parent held it in her arms in it's native country, and did not reſign it till ſhe was killed with a ſpear by one of the natives, when ſhe was found to meaſure five feet in height. A male of this kind has been deſcribed by Dr. Tyſon. See APE, GREAT.

CHINCH. A genus of inſects deſcribed by Dr. Hill as furniſhed with four feathery wings. The antlers are compoſed of a few oval joints, the extreme one running out into a point; the tail is ſplit, and ſetous; and the feathers, which are placed as wings, conſiſt of jointed ribs, thin flat plates being regularly placed over them. Theſe animals are ſo extremely ſmall, that they have in a great meaſure eſcaped obſervation. Few of thoſe naturaliſts who have ſtudied theſe minute inſects, have been able to trace many of them; and, from ſuch as have, very little of their nature is to be learned, as the lucernal microſcope is abſolutely neceſſary to aſſiſt the naturaliſt's reſearches, and this invention is but of modern date. Thoſe creatures in the inſect world to which the Chinches approach the neareſt, are the feather-wing moths; but from theſe they differ abundantly in the ſtructure of their antlers, the ſhape of their bodies, their motions, and the peculiar formation of their tails. The ſubſtance which compoſes the wings of the Chinches, though in appearance they very much reſemble the plumes of birds, are in reality very different; for they have nothing feathery in them, but are ſolely compoſed of hollow jointed ribs, not unlike ſome of the corallines; and the ſeeming hairs, or plumes, which cover them, are flat, thin, conic ſcales.

CHINCH, STRAW-COLOURED. Each wing of this ſpecies is compoſed of one diſtinct, undivided feather; the head is of a lemon-colour; the eyes are of a delicate blue; the antlers are of a very pale brown, but ruddy at the baſe of each joint; and the feelers are pale, and ſmall. The trunk is of a light ſtraw-colour; the ſcutcheon is ſomewhat greeniſh; the body is of a pale ſtraw-colour, and the lines which interſect it are whitiſh. The legs are a pale brown, but of a deeper caſt at the joints; the wings are whitiſh, with a ſhade of brown; and the tail is amber-coloured.

Dr. Hill, to whom we are indebted for the deſcription of the Straw-Coloured Chinch, informs us, that this creature fell under his cognizance in the following very ſingular manner. A gentleman very ſubject to the head-ache, (which complaint his phyſician attributed to his ſtudious diſpoſition) ſneezing one day with great violence as he was writing, obſerved ſome atoms preſently afterwards on a ſheet of white paper which lay before him; and, as they plainly moved, he folded them up, and brought them to the doctor; who having laid a few of theſe animalcules before the lucernal microſcope, found them to be Straw-Coloured Chinches, uſually inhabiting the flowers of the plant mignonette, which, on enquiry, he found the gentleman kept in his chamber.

CHINCH, TAWNY. The characters of the genus are in no ſpecies more diſtinctly ſeen than in this. Each wing is compoſed of two feathers, riſing from a ſimple baſe; the head is of a dull yellowiſh brown; the eyes are large, and of a fiery red; the antlers are firm, a little hairy, very ſharp at the points, and of a pale-brown colour. The feelers are ſhort and duſky; the trunk is brown,

covered

covered with pale hairs, and variegated with a dead yellow; the body is of a tawny brown, divided by dusky rings, and covered with short, firm, whitish hairs, which the animal can erect at pleasure; the legs are of a dusky brown, strong-jointed, and furnished with forked, hard, horny toes, having some stiff hairs on them. The wings are of a pale dusky yellow, their ribs being beautifully jointed, and evidently hollow; and the scales, which constitute what are called the hairs, or feathery substances, are very numerous, narrow, and sharp, both at their edges and points.

This little animal lives in the hollows of the flowers of plants, like the straw-coloured Chinch; and seems calculated to do at least as much mischief, being equally as minute, more covered with hairs or short bristles, and to all appearance, both from it's structure and motions, able to drive them into the tender membranes of the brain with more force. It leads an erratic life, wandering from flower to flower; however, it shews a predilection for those which are sweetest. The damask rose, the stock July-flower, and the wall-flower, are often covered with these insects; nor do they disdain the lupine and the pea.

How far head-aches may be attributed to these little creatures, is a subject which has as yet been but imperfectly investigated. Certain, however, it is, that many feel this complaint after smelling nosegays; and some have died of the effects produced from large quantities of violets and other flowers lodged in their chambers. Physicians, indeed, have ascribed the deaths of many of their subjects to the powerful odours of these plants; but it is much more probable that they originated from these insects.

CHINESE FISH. This fish is of a round figure, and about a span long; has a head like an eel, small eyes, and a long tail; and is green on the back, and white on the belly. It is a fresh-water fish; and is esteemed salubrious when caught in running streams, but otherwise when taken in ponds and stagnant waters.

CHITON. A genus of multivalve shells, the inhabitant of which is the doris. The shell is plated, and consists of many parts, lying transversely on each other. The species are numerous; but the following are found on the British coasts.

Chiton, Hairy. This species has seven valves; and is thick-set with short hairs. The shell is five-eighths of an inch long.

Chiton, Marginated. This animal is found on the coasts of Yorkshire. The shell is composed of eight valves; and the margin is serrated and reflected.

Chiton, Smooth. This species is found on several parts of the Caledonian shores. The shell consists of eight valves, entirely smooth; with a longitudinal mark along the back, which is a little elevated. It's size is equal to that of a wood-louse.

CHIUREA. An appellation given by Cardan, Oviedo, and some other authors, to the opossum.

CHLOREUS. A name given by some naturalists to the common yellow-hammer, or emberiza lutea.

The term Chloreus is also used by many of the earlier writers to express the galbula, a very elegant and beautiful bird of the thrush kind, almost entirely of a yellow colour.

CHLORIS. A bird commonly called in England the green-finch, a well known warbler, of the size of a sparrow, and remarkable for it's green colour, as well as for the largeness of it's beak, in which respect it approaches to the coccothraustes. It builds in hedges, and feeds on the seeds of vegetables.

CHOEROGRYLLUS. See Hedge-Hog.

CHOIROS. An Aristotelian appellation for the cernua, or acerina, of the Latins; in English, the ruffee. This fish has received a variety of names; but it is properly a species of perch; and is distinguished by Artedi from the others of that genus under the title of the perch with only one fin on the back and a cavernous head.

CHONDROPTERYGII. A Linnæan term for one of the great classes or families of fishes; the characters of which are, that the rays of the bones are not finny, but cartilaginous; that the bones of the body are also cartilaginous; and that the mouth in the generality of the species, is placed in the lower part of the body. The name is derived from Chondros, a Cartilage; and Pterugion, Fin, or Wing.

CHOUGH, CORNISH. This bird, which appears to be of the magpie kind, is about seventeen inches long, and thirty-three broad, when the wings are extended. It weighs about twelve or thirteen ounces; and is almost as large as the crow, and nearly of the same shape. The bill, legs, and feet, are red; but the feathers all over the body are black. It is remarkable for the uncommon softness of it's modulations when it applies for food to those who usually cares it; and equally remarkable for it's frightful shriek when any strange object approaches it. It is usually kept about houses in Cornwall; where it becomes tame like the raven or magpie, and is equally mischievous, delighting in purloining money, or any splendid bauble which comes in it's way. In it's wild state, it is very apprehensive of danger; and accordingly builds it's nest in the most inaccessible cliffs, and in the middle of the steepest rocks. When tamed, it is very amusing, docile, regular, and constant to the habits it acquires. It goes early to roost; and, during tempestuous weather, generally takes shelter in some unfrequented place; but, in a mild and serene season, it sits either on the ridges of houses, or struts about on the ground in a very stately manner.

Aldrovandus thinks that this bird is peculiar to the Alps; but it is also found in Crete, Ireland, and Wales, as well as in the county of Cornwall.

CHOUX. A name given by some naturalists to a species of shell-fish of the cordiform or bucardium kind. Fabius Columna has described it in a very elegant manner; and Lister has exhibited a double representation of it. See Heart-Shells.

CHREMPS. The Grecian name of the fish called chromis by naturalists. It is a species of the sparus; and is distinguished by Artedi under the name of the sparus with the second ray of the belly-fins very long.

CHRISTOPHORUS PISCIS. A name sometimes given to the faber; or, as it is generally called, the gilded fish.

CHROMIS. A small fish caught in the Mediterranean, seldom exceeding three inches in length, of a moderate thickness, and of a dusky brown colour. Artedi, who accurately examined this animal, does not allow it a distinct generical name, but makes it only a species of his genus of spari, stiling it the sparus with the second ray of each belly-fin carried to an extreme length.

Chromis is also a name used by Bellonius to express a large fish caught in the Mediterranean,

more uſually deſcribed under the appellation of the umbra.

CHRYSALIS. A term in the hiſtory of inſects of ſimilar import with Aurelia, for which it is indiſcriminately uſed.

The word Chryſalis, from Chruſos, Gold, ſeems to imply a peculiar yellow, or golden colour, uſually found in the nymphæ of ſome ſpecies of inſects; but this is merely accidental, as it is not perceptible in all nymphæ. Some, however, confine the extent of the appellation Chryſalis to the nymphæ of butterflies and moths.

CHRYSOMELA. A genus of inſects frequently confounded with beetles, the antennæ of which are formed like bracelets, or necklaces of beads, and are thickeſt towards their extremities. The body is of an oval figure; and the thorax is oblong and rounded. This genus contains a variety of ſpecies.

Chrysomela, Blue-Green. This is one of the largeſt ſpecies of the kind, though far from being a conſpicuous inſect. The head is ſmall, the legs are ſlender, and the belly is ſmooth. The back is roundiſh, or convex; and the colour is an admixture of blue and green, with a very fine tincture of gold-colour diffuſed over the whole. The margins of the caſes of the wings are ſomewhat prominent, and marked with a few hollow ſmall ſpots entirely ſurrounding them; and the feelers, legs, and belly, are green. It is commonly found in meadows during the months of May and June.

Chrysomela, Red-Breasted. The caſes of the wings of this inſect are reddiſh; and the head is ſmall and black, as well as the body, legs, and the lower part of the breaſt and feelers. It is ſeen on ſome ſpecies of willow-trees in June and July.

Chrysomela, Blue-Green, with a red breaſt and thighs. The head and caſes of the wings of this ſmall animal are of a beautiful ſhining green, with a tinge of blue; there are a few hollow ſpots on the head; the breaſt is ſmall, convex, and of a reddiſh colour, with a caſt of blue-green; and the upper parts of the legs are reddiſh, and the under black. It is common in moſt parts of this kingdom.

Chrysomela, Black. This pretty large inſect is entirely black. The breaſt and caſes of the wings are marked with ſmall hollow points placed very near each other; the wings are flexible, ſoft, and blunt; and the feelers conſiſt of twelve joints. It reſides in quarries, and has a ſlow, creeping motion.

Chrysomela, Smooth Black. The baſes of the feelers of this inſect are yelloviſh; the joints of the wings are neither hollow nor ſtriated; but the black colour with which this animal is covered exhibits a blueiſh caſt.

Chrysomela, Purplish Black. This inſect is found on the birch-tree, on the leaves of which it feeds. The colour is a blackiſh blue inclining to purple, or rather to violet; the belly, feet, and feelers, are black; the head and breaſt are marked with minute hollow, irregular points; the caſes of the wings are ſtreaked; and the eyes are ſo ſmall as to be hardly perceptible.

Chrysomela, Purplish Black, ſprinkled with hollow points. This ſpecies nearly reſembles the former, except that it is larger, and that the caſes of the wings are marked with hollow points irregularly diſperſed, but not ſtreaked. It is found, during the vernal ſeaſon, on alder-trees.

Chrysomela, Purplish Black, with the breaſt yellow. This inſect frequents the willow, and is entirely of the ſame colour, ſhape, and ſize, of the former, except that the breaſt is yellow on the ſides, round in the middle, and of a violet-colour, but ſomewhat blacker on the centre. The head and lower belly are black; and in the middle of the red on the breaſt there appears a black point.

Chrysomela, Shining Green. The breaſt of this inſect is ſmooth; and the caſes of the wings are marked with hollow points, which touch each other. Towards the vent, this animal becomes of an obtuſe figure; and it ſeems to expand the caſes of it's wings with difficulty. The feet and feelers are black; and the breaſt is very ſlightly marked with points. It is found on willows.

Chrysomela, Shining Green, with the breaſt hollow before. In this ſpecies the breaſt is only hollowed at the top; and in other reſpects it reſembles the preceding.

Chrysomela, Shining Green, with a flat breaſt. This ſpecies differs from the former in being ſomewhat leſs, and of a rounder figure.

Chrysomela, Pale Green. This inſect is found on willow-trees; and is diſtinguiſhed from the other varieties by the paleneſs of it's colour, and the nine rows of points placed lengthwiſe on each caſe of the wings. The eyes are black; and the bottoms of the feet are white.

Chrysomela, Red, with a cylindraceous breaſt. The flower-de-luce affords ſhelter to this variety. It is of the middle ſize; the breaſt, the caſes of the wings, and the top of the head, are red; but the feelers, eyes, knees, belly, breaſt-plate, and the under-part of the head, are black. The breaſt-plate, which is conſiderably narrower than the caſes of the wings, is hollow on each ſide; and the caſes of the wings themſelves are marked with hollow points of a moderate ſize.

Chrysomela, Copper-Coloured. This animal is commonly found on willows, is of a middle ſize, and appears like red copper highly poliſhed.

Chrysomela, Blackish Blue, with red caſes to the wings. This inſect is found on the poplar-tree in the beginning of ſpring. It is a pretty large animal; it's red wings are marked with ſmall points; and the extremity of each caſe of the wings has a black ſpot. The breaſt is ſmooth, and of a greeniſh-black colour; and the corſelet, belly, and feet, are of the ſame colour; but the feelers are black. The caſes of the wings of this kind are not compoſed of plates, or leaves, but ſeem to be made up of eleven joints, the laſt of which is the largeſt.

Chrysomela, Red, Cylindrical-Breasted, with red caſes to the wings. This ſpecies is found on the branches of the aſparagus, on the ſtalks of which it ſubſiſts. It is a ſmall inſect; the head is of a blackiſh blue colour; the feelers are black; and the breaſt, which is narrow and cylindrical, is marked behind with two black points. The caſes of the wings are oblong, yellow, and very pale on their external edges; and on each of them there is a blue ſpot reſembling a croſs.

Chrysomela, Green-Breasted, with red caſes to the wings marked with a blue croſs. The colour of the head and breaſt of this inſect is a copper green; the feelers and feet are black; and the tints over the whole body are elegant and attractive.

Chrysomela, Oblong Black, with red caſes to the wings marked with four black ſpots. This is a pretty large ſpecies, and of a roundiſh ſhape. There are two large ſpots on each caſe of the wings,

the firſt of which is oval, and the laſt more circular. The feelers are almoſt dentated; and the breaſt is ſhort.

Chrysomela, Red, with the caſes of the wings marked with five black ſpots. This inſect is found on the willow-tree, and is one of the largeſt of the kind. The head is black; the breaſt is red, except in the middle, where it is black; on each of the caſes of the wings, which are red, there are five large black ſpots of an unequal ſize; and the belly and lower parts of the feet are black.

Chrysomela, Long Dusky, with an incurvature ſtamped on the caſes of the wings. The breaſt of this inſect is grey, ſlightly covered with white hair; and the caſes of the wings are of a greyiſh brown, with a white mark on each of the figure of the Roman S.

Chrysomela, with Dusky Wings. This ſpecies is no larger than a flea; the body is black; the breaſt is brown; and the wings are livid on their back parts.

Chrysomela, Livid. This variety is likewiſe ſmall; the eyes are black and ſhining; and the colour is a pale livid.

Chrysomela, Reddish on the Superior Part. On the breaſt of this ſpecies there are two black ſpots, and ſeveral on the caſes of the wings; the head is black; and the ſize is moderate. This creature frequents poplar-trees.

Chrysomela, Blackish Brass-Coloured. The edges of the caſes of the wings of this inſect, as well as the breaſt, are yellow; but the middle of the breaſt and head are of a blackiſh copper-colour; the lower part is entirely black; the feet are of the ſame colour; and the body is of an oblong figure.

Chrysomela, Brass-Coloured, with two yellow lines on the caſes of the wings. The body of this inſect is oblong; and there is a yellow line on the lateral edge of the breaſt, in the centre of each caſe of the wings, and on their external edges. The legs, and the internal part of the thighs, are yellow; and the feelers are knotted.

Chrysomela, Black-Breasted, with red caſes to the wings marked with a black ſpot. This ſpecies is of the middle ſize; the body is of a narrow oblong figure; the feelers, head, breaſt, and belly, are black; the wings are white; the feelers are remarkably ſmall; and the caſes of the wings are of a bright red, furniſhed with eight ſtreaks, compoſed of hollow points whoſe baſes are black.

Chrysomela, Blueish Green, with a red breaſt and thighs. This inſect makes it's neſt in the galls of the willow-tree. The head and caſes of the wings are of a ſhining blueiſh green, marked with hollow points; the breaſt, which is ſmall, and marked with a reddiſh green, or rather a cheſnut-colour, is thick and convex; and the feelers and bottoms of the feet are black.

Chrysomela, Yellow Testaceous, with ſhort wings. This animal lives on flowers, and is ſcarcely bigger than a louſe. The body is ſmooth and oblong; the feelers are full of knots; and the caſes of the wings are furrowed, and ſhorter than the two joints of the belly.

Chrysomela, Oblong Testaceous, with accumulated caſes to the wings. This very minute inſect is of a cheſnut-colour, has filiform feelers, and the caſes of the wings appear as if painted.

Chrysomela, Dusky, with a blackiſh head. This ſpecies ſubſiſts on the leaves of the willow-tree, and is ſomewhat leſs than a flea. The body is oblong; the feet are ſomewhat paler than the body, which is of a deep cheſnut-colour; and the head is black.

Chrysomela, with Dusky Cases to the Wings, and a yellow margin. The head of this animal is brown; the breaſt and feet are yellow; the caſes of the wings are almoſt black; the feelers are alternately black and yellow; the wings are brown, with black veins; and the belly is yellow, and marked with a broad black line.

Chrysomela, Testaceous. This inſect is found, in the beginning of ſpring, among rotten wood, and is placed by authors among the largeſt kinds. The body is of an oval figure, and a cheſnut colour; the eyes are black; the feet and feelers are red; the under-parts of the feet are white; and the caſes of the wings are marked with hollow points.

CHRYSOMYTHRES. A name given by ſome naturaliſts to the goldfinch.

CHRYSOPHRYS. An appellation given by the ancient Greek and Latin authors to a fiſh called aurata by the moderns. It is a ſpecies of ſparus.

CHRYSOPIS. A ſpecies of fly ſo called from the beautiful gold-colour of it's eyes. The body is green, and longiſh; the wings are of a ſilvery colour, extremely thin and tranſparent, with green ribs or nerves; and the antennæ are very ſlender and blackiſh. It flies very ſlowly, generally ſettles on elder-trees, and it's ſmell is pretty ſtrong.

CHUB. This fiſh, which is very coarſe, and full of bones, frequents the deep holes of rivers; and, during the ſummer ſeaſon, commonly lies on the ſurface of the water beneath the ſhade of ſome tree or buſh. It is very timid, darting to the bottom on the ſmalleſt alarm; but it ſoon recovers itſelf, and reſumes it's ſituation. It feeds on worms, caterpillars, graſhoppers, beetles, and other coleopterous inſects which happen to fall into the water; and, in caſes of neceſſity, it even has recourſe to cray-fiſh.

The Chub derives it's name from it's head, not only in the Engliſh, but alſo in many other languages. It does not grow to any conſiderable ſize, ſeldom exceeding the weight of five pounds, though Salvianus mentions ſome which were eight or nine. The body is oblong, rather round, and nearly equal for a conſiderable part of it's length. The ſcales are large; the irides are ſilvery; the cheeks are of the ſame colour; the head and back are of a deep duſky green; the ſides are ſilvery, though in ſummer they aſſume a yellow colour; the belly is white; the pectoral fins are of a pale yellow; the ventral and anal fins are red; and the tail is ſlightly forked, and of a browniſh tinge, but ſhaded with blue at the extremity.

The beſt manner of fiſhing for the Chub is to prepare a very ſtrong rod of a ſufficient length, with a graſhopper affixed to the hook; and to retire as far as poſſible from the verge of the ſtream, that the fiſh may not be apprehenſive of any danger; for, if the angler be concealed, the Chub ſeldom fails to take the bait: nevertheleſs, care muſt be taken to play it ſufficiently, leſt, from the powerful exertions of the fiſh, the tackle ſhould give way. In March and April, the Chub may be caught with large red worms; in June and July, with flies, ſnails, and cherries; but in Auguſt and September, with pounded cheeſe mixed with a little ſaffron and butter. Some anglers make a paſte of cheeſe and Venice turpentine as a bait for the Chub in winter, at which ſeaſon this fiſh is ſuppoſed to be in it's higheſt perfection, the bones being

ing leſs troubleſome, and the fleſh more firm and bettter flavoured. The angler, however, in order to obtain ſucceſs, muſt in cold weather keep his bait at the bottom, and in hot near the ſurface of the water.

CHUCHIA. An appellation given by Cardan, Oviedo, and ſome other authors, to the opoſſum.

CHURR-WORM. The name given by ſome naturaliſts to the gryllotalpa.

CICADA. A genus of inſects of the order of hemiptera, peculiar to Italy and ſome other warm climates. It has large wings; and makes a noiſe like that of a cricket, from which circumſtance it is by ſome called the balm-cricket.

This inſect, when powdered and mixed with pepper, is recommended by ſome of the medical faculty as a ſpecific for colics; and, when reduced to aſhes, is adminiſtered in nephritic caſes.

CICADA AQUATICA, or the WATER GRASHOPPER. A name very injudiciouſly applied by Rondeletius and others to an animal frequently found in ſtagnant waters. It is of a greyiſh colour, with ſix legs, and the appearance of rudiments of wings; and is remarkable for a ſort of maſk before it's face, which it lifts up at pleaſure. It is a poor, defenceleſs creature, the prey of almoſt all other water inſects, and even of thoſe which are greatly inferior to itſelf in ſize. It ſeems to have no relation to the graſhopper, but is the hexapode or worm-ſtate of one of the libellæ or dragon-flies. The hind-legs, which are conſiderably longer than the others, are uſed as oars, in the act of ſwimming, in the manner of thoſe of the notonecta.

CICADA, GREEN-WINGED. This inſect has a yellow head, and is as large as a fly, but very narrow in proportion to it's length. The external wings are of a fine deep green colour, and the internal ones of a blueiſh grey; the covering of the breaſt being alſo green, but paler than the wings. The head is yellow, marked with two large ſpots on the hinder part, and ſeveral ſmall ones at the ſides; and there are ſome tranſverſe ſtreaks on the forehead. The body is of a blueiſh grey; and the legs are yellow. It is commonly found on aquatic plants in autumn.

CICADA WITH YELLOW EXTERNAL WINGS. This ſpecies is about the ſize of a common fly; and is wholly of a beautiful yellow colour, except when the wings are cloſed, and then a longitudinal black line appears on each ſide of the back, ſo divided in the middle as to exhibit the form of two lines, the one running from the breaſt, and the other from the tail to the middle, where they are obliquely ſeparated; the two ſuperior parts of theſe lines unite near the breaſt; and on each ſide of the head and breaſt there is a black ſpot. The feelers are ſhort; the forehead is a little furrowed tranſverſely; and, when the wings are extended, the body ſeems to be yellow in the middle, and black on each ſide. This inſect frequents paſture-grounds in the month of June.

CICADA OF NORTH AMERICA. Theſe animals are annually ſeen in Pennſylvania, though in ſmall numbers; but, after certain intervals of fourteen or fifteen years, they appear in ſuch prodigious numbers, as to obtain the name of locuſts. Several ſorts of inſects prey on them with unceaſing devaſtation, ſo that their numbers ſoon decreaſe; and their duration being naturally ſhort, they quickly diſappear.

North America affords two diſtinct ſpecies of Cicadæ; the largeſt of which was firſt deſcribed in the Philoſophical Tranſactions of 1764.

Linnæus enumerates eight ſpecies of Cicadæ; to which he gives the names of the American laternaria, the Chineſe laternaria, the ranatra, the flea-locuſt, the Cicada with a double-horned breaſt, the manna-bearing Cicada, the Cicada of the elm-tree, and the Cicada of the roſe.

CICADULA. An appellation given by Ray to a ſmall ſpecies of inſect, called by Swammerdam locuſta pulex, found in May and June on the ſtalks and leaves of various plants, involved in a ſpumous white matter commonly called the cuckow-ſpit. This ſpume is not, as generally imagined, exſudated from the plant, but from the mouth of the animal; and, if it be carefully wiped away without injuring the inſect, more will immediately be ſeen iſſuing from it's mouth, till it increaſes to as large a quantity as was removed.

There are ſeveral varieties of this animal; and, while enveloped in the ſpume, they reſemble lice, ſome being white, others yellow, and ſome green. The hind-legs are ſomewhat longer than thoſe before; and, at the ſhoulders, there is an appearance of the rudiments of wings. They often change their ſkins while immerſed in this froth; and, at this period of their exiſtence, only creep along; but, whenever they quit the plants, they hop and fly, being then furniſhed with large wings which cover their whole bodies.

CICERELLUS. A name given by Boccone, and ſome other authors, to the ammodytes, or ſand-eel, the tobianus of Schoneveldt.

CICINDELA. A genus of beetles, having filiform feelers, prominent dentated jaws, and roundiſh and ſomewhat angular breaſts.

CICINDELA, GREEN. The upper ſurface of the body of this very beautiful inſect is ſplendidly variegated with green and gold; the caſes of the wings are ſmooth and gloſſy, of the ſame colour with the body, and marked with ten white ſpots, ſome of which are roundiſh, others are oblong, and one is ſhaped like a creſcent. The breaſt is narrow, roundiſh, and of a deep green; the head is ſmall, depreſſed, and finely tinged with gold; the eyes are black and prominent; and the mouth is of the ſame colour, except that the upper-lip is white. The upper-jaw, which is prominent, contains ſeveral ſtrong teeth; but the lower has only one tooth, which is placed at it's extremity. There are two pair of feelers, one pair conſiſting only of two joints and the other of ten. The legs are very long and ſlender; and at the baſes of the thighs there is a kind of hard, oval ſubſtance. This inſect, which is common in paſture-grounds during the vernal ſeaſon, both runs and flies very ſwiftly.

CICINDELA WITH BLUEISH-GREEN CASES TO THE WINGS. This animal has a yellow belly, and it's body is nearly of an oval ſhape. The head, breaſt, feelers, and legs, are entirely black; the belly is of a yellowiſh tawny colour; the caſes of the wings are of a blue green, variegated with hollow ſpecks; and the feelers, which are ſhort, conſiſt of ten joints. This inſect frequents woody places.

CICINDELA, BLACK. This ſpecies is entirely black, except that the caſes of the wings are marked with ſix white ſpots and a white ſtreak; and the thighs and legs are long, ſlender, and ſomewhat hairy. It is found in woods.

CICINDELA, BLACK, WITH A RED BREAST. The

The caſes of the wings of this inſect are of a blackiſh blue; the feelers are black; the head and feet are of the ſame colour; the breaſt is of a reddiſh brown; and the belly, which is oblong and narrow, is yellow behind.

CICINDELA WITH BLUEISH CASES TO THE WINGS, and a ſallow-coloured body. This inſect ſeems attached to ſhady places, and is nearly of the ſame ſhape with the former. The head, breaſt, feet, and feelers, are black; the belly, near the feet, is of a ſallow hue; the caſes of the wings are of a ſhining blue, marked with hollow points; and the feelers conſiſt of ſix joints.

CICINDELA WITH A GREEN BREAST: The caſes of the wings of this inſect are of an iron-grey colour in front, and of a blueiſh black behind; the feelers are black; and the body and breaſt are of a fine blueiſh green.

The glow-worm is by ſome affirmed to be the female of the Cicindela; but with reſpect to this aſſertion naturaliſts are much divided.

CICLA. A name given by Artedi, and other late writers, to a ſpecies of fiſh called chichle by Ariſtotle and Ælian, and turdus minor by the generality of the moderns.

CICONIA. The claſſical name for the ſtork.

CIERGE. The French name of a ſea-ſhell of the order of voluta. It is of the colour of common yellow wax, without any variegations on the ſurface; but, when the rough coat is taken off, it exhibits the zones and colours of the onyx. Among the virtuoſi, it is generally known by the name of the onyx-ſhell.

CIGALE. A French term for the cicada, particularly the large ſpecies called acheta by the ancients. See HARVEST-FLY.

CIGALON. An appellation given by French naturaliſts to a ſmaller ſpecies of the cicada, as that of cigale is affixed to the larger. It appears that the ancients were unacquainted with two ſpecies of cicadæ, a great one and a ſmaller; the laſt of which they called tettigonia, and the firſt acheta. It has been generally imagined that the Cigalon of the moderns correſponded with the tettigonia; but Reaumur obſerves, that there are in reality three kinds of them, a large, a middling, and a ſmall one; that the large was the acheta of the ancients; that the middle one was their tettigonia; and that the Cigalon, which is about the ſize of the hornet, was wholly unknown to them.

CIGNE. A name given by the French virtuoſi to a ſpecies of voluta. When it appears in it's natural coat, it has a rough ſurface, and is of a yellow colour, much like that of common wax; whence it is called cierge, or the wax-ſhell. When the external covering is removed, it appears of a very beautiful white, and then obtains the name of the Cigne, or ſwan-ſhell. When highly poliſhed, ſo as to diſcover the internal ſtructure, it appears zoned in the manner of the onyx; and is then called the onyx.

CIMEX. A genus of inſects, the characters of which are theſe: the head is ſmall; the back, towards the ſhoulders, is broad, and covered with a cruſtaceous ſubſtance; the ſhoulders are of an angular ſhape; the wings are partly cruſtaceous and partly membranaceous, and ſo formed as to exhibit the figure of a croſs where they meet at the middle of the back; and the proboſcis is long, bent under the belly, and always lies ſtraight, and not in a ſpiral form.

Ray divides the Cimices into two kinds; thoſe of a ſhorter, and thoſe of a longer and narrower ſhape. Of the firſt he deſcribes eight ſpecies, and of the latter five.

CIMEX, BRASSY BLUE. This inſect is of the ſize of the large blue fly, but more flat. The upper ſurface of the body is of a beautiful blue colour, with a metalline caſt; on the breaſt there is a longitudinal line, which at the lower extremity is terminated by one running acroſs; the extremity of the ſhield is either red or white; and on each ſide there is a ſpot of the ſame colour. The legs and feelers are black; and the body, underneath, is of a blueiſh black. The ſpots on the male are white, and thoſe on the female red.

CIMEX, HENBANE. This inſect, deſcribed by Linnæus, is a very beautiful one. The body is very narrow; the head is black, except on the middle, where it is of a bright red; the breaſt is black at it's forward extremity, but red in every other part, except two angular ſpots behind. The external wings are red, but marked with a black ſpot in the middle of each; ſo that, when cloſed, two of theſe ſpots appear on the back. The ſhield is black, with a red extremity; and the body under it is black; but in other parts it is red, except near the vent. The wings are brown and ſtreaked; the feelers and legs are black; and the trunk and ſnout conſiſt of four joints.

CIMICIFORMIS MUSCA. A name given by Ray to a ſpecies of beautiful inſects, partly of the fly, and partly of the cimex kind. They are found under hedges, and in dry places. Of theſe creatures the above ingenious naturaliſt enumerates eleven ſpecies.

CINÆDUS. A fiſh common in the Archipelago, near the rocks and ſhores; ſuppoſed to be of the ſame ſpecies with the alpheſtes, and of the turdus kind, except in having it's back-fin prickly the whole length. It is entirely of a yellowiſh hue, blended and variegated with an admixture of purple; it's ſcales are rounded and indented; and it's teeth are very ſtrong and firm, and diſpoſed in a double row in each jaw.

CINCLUS. A ſpecies of the tringa; a name ſometimes given to the bird called in Engliſh the greater reed-ſparrow; and, by the generality of authors, junco.

Cinclus is alſo the name of a ſpecies of ſturnus, or ſtarling.

CINNAMOLOGUS. An appellation given by the ancients to a bird which they imagined built it's neſt in the cinnamon-tree, or on rocks and precipices with the broken branches of that valued tree. The idle traditions reſpecting this bird render it impoſſible to determine it's real kind; ſome affirming it to be the phœnix, and others a particular ſpecies of fowl.

CIRCERELLUS. A name by which ſome authors expreſs the ammodytes, or ſand-eel.

CIRCUS. An appellation given by Bellonius, and ſome others, to the melvus æruginoſus, or moor-buzzard.

CIRL. A bird deſcribed by Aldrovandus; and called zivolo by the Italians, from the ſyllable zi, zi, which it frequently repeats. It is of the ſize of a ſparrow; and has a thick bill, with a knob on the upper chap. The breaſt and belly are yellowiſh, ſprinkled with brown ſpots; and the whole upper-part is of a browniſh brick-colour. The male is more yellow about the head and neck than the female. The Cirl ſits chiefly on the ground, and feeds on the ſeeds of plants.

CIRL, FOOLISH. This bird, ſo called by Aldrovandus, is of the ſame magnitude, and nearly of the ſame figure, with the former. The upper part of the head, and the whole back, are of the colour of ruſty iron; the prime-feathers of the wings and tail are blackiſh, but their edges are of a ruſt-colour; and on the wings there are a few black ſpots.

CIRRIS. A ſmall ſpecies of heron; called by ſome authors the ardea hæmatopus, or the red-legged heron, from it's beautiful red legs.

CITELLUS. A ſmall animal of the mouſe kind, which lives in caves and holes of the earth. It's body, like that of the common weaſel, is long and thin; it's tail is very ſhort; and it's colour is a pale ſilvery grey. It reſembles the mouſe in the want of external ears; but it has apertures which ſupply their places, in the manner of birds. Theſe animals live in communities, great numbers of them being uſually found together in the ſame cave, furniſhed with a large ſtock of nuts, cheſnuts, and other fruits. Their fleſh is well-flavoured; and their ſkins are much valued in cold climates. They are natives not only of the frigid regions, but likewiſe of Bohemia, Auſtria, and Hungary.

CITHARUS. A fiſh frequently caught in the German and Mediterranean ſeas. It is flat, and of the turbot kind, but entirely covered with large ſcales.

CITRIL. An appellation given by naturaliſts to the citrinella, or verzellino; a bird common in Italy, where it is generally caged on account of the beauty of it's plumage and the ſweetneſs of it's notes. It's ſhape bears a ſtrong reſemblance to that of the common linnet. The head and back are green; the rump is a greeniſh yellow; and the neck, with a ſmall part of the head behind, are grey.

CITULA. The name given by Paulus Jovius to the fiſh called faber by the generality of authors, and doree in Engliſh. Pliny calls it zeus; and hence Artedi has made zeus the generical name which comprehends this, and ſeveral other ſpecies, under the ſame arrangement. The faber is called the zeus with the prickly belly and the tail rounded at the extremity; and this ſeems to be the true ſpecific name of the Citula.

CIVET. This animal, called the Civet-cat by various authors, conſtitutes a ſpecies of the viverra, or weaſel, in the Linnæan ſyſtem of zoology; and, by Buffon, is made to conſiſt of two ſpecies, one of which he calls the Civet, and the other the Zibet. The latter differs principally from the former in having a longer and more ſlender body, a ſmaller noſe, longer and broader ears, in being deſtitute of the mane or long hair running down the back, and in having the tail longer, and more annulated with different colours from one end to the other. Such are the variations which have induced this great naturaliſt to ſuppoſe that theſe animals are of different ſpecies; but, in conformity to the uſual practice of zoologiſts, we ſhall conſider them merely as two varieties of the ſame animal, and only altered in figure by climate, food, or education.

The Civet ſtrongly reſembles animals of the weaſel kind in the length and thinneſs of it's body, the ſhortneſs of it's legs, the odorous matter which exſudes from it's poſterior glands, the ſoftneſs of it's fur, the number of it's claws, and their incapacity of being ſheathed; while it differs from them in being conſiderably larger, in having it's noſe lengthened ſo as to reſemble that of the fox, in it's tail being long and tapering to a point, and in it's ears being ſtraight like thoſe of the cat.

CIV

The colour of the Civet varies conſiderably: however, it is commonly aſh ſpotted with black; but, in the female, it is more white; and the ſpots much larger. The colour on the belly, and under the throat, is black; and the other parts of the body are ſometimes black ſtreaked with grey: it has frequently the variegated hues of the tabby-cat; and, in ſhort, it is impoſſible to give a preciſe idea of it's various external ſhades.

The opening of the pouch, or bag, which is the receptacle of the Civet, differs from that of the reſt of the weaſel kind; in not opening into, but under the anus. Beſides this aperture, which is pretty large, there is another ſtill lower down; but for what purpoſe it is deſigned, naturaliſts are not agreed. The pouch itſelf is about two inches and a half broad, and two long; it's opening makes a chink, from the top downwards, about two inches and a half long; and it is covered on the edges, and internally, with ſhort hair. When the two ſides are drawn aſunder, the inward cavity may be ſeen, which is large enough to contain a pullet's egg; and round it on every ſide there are ſmall glands, which open, and furniſh that ſtrong perfume ſo well known and formerly ſo much admired.

Thoſe who are employed in rearing theſe animals for the ſake of their perfume, uſually collect it twice or thrice in the week, and ſometimes oftener. The creature is on ſuch occaſions confined in a long box, in which it has not room to turn itſelf round: the perſon opens the box behind, drags the animal backward by the tail, keeps it in this poſition by means of a bar in front, and with a wooden ſpoon ſcrapes the Civet from the pouch with the greateſt care; after which he quits his hold of the tail, and ſhuts the box. The perfume, thus procured, is ~~put~~ into a veſſel, which is kept very cloſely ſhut; and, when a ſufficient quantity is obtained, it is diſpoſed of to conſiderable advantage.

The Civet, though a native of the warmeſt climates, thrives very well in temperate, and even in cold ones, provided it be carefully defended from the injuries of the air; and hence it is bred not only in Turky, India, and Africa, but alſo in Holland, where the Dutch reap conſiderable advantage from it's perfume. The Civet of Amſterdam is reckoned the pureſt; it being frequently adulterated in other countries with various gummy ſubſtances, which at once increaſe it's weight and diminiſh it's value. The quantity which a ſingle animal affords generally depends on it's health and nouriſhment. Raw fleſh chopped ſmall, eggs, rice, birds, young fowls, and particularly fiſh, are the kinds of food moſt acceptable to this creature; and theſe ſhould be varied, in order to ſuit and entice it's appetite, and continue it's health. Though it drinks very ſparingly, it waters frequently; and, on ſuch occaſions, it is impoſſible to diſtinguiſh the male from the female.

The perfume of the Civet is ſo very ſtrong, that it communicates itſelf to every part of the animal's body: the fur is impregnated with it; and the ſkin penetrated to ſuch a degree, that it retains the ſcent a conſiderable time after it is ſtripped off; and, were any perſon to be ſhut up with one of theſe creatures in a cloſe room, ſo copiouſly is the odour diffuſed, that he would very ſoon be unable to ſupport it. When the animal is irritated, the ſcent is much more violent than ordinary; and, if it be ſo tormented as to produce a perſpiration, this is alſo a ſtrong perfume, and ſerves to adulterate or increaſe what is otherwiſe obtained.

In general, Civet is ſold in Holland at about fifty ſhillings ſterling an ounce; though, like all other commodities, it's value alters according to the demand. It ſhould be choſen freſh, of a good conſiſtence, a whitiſh colour, and a ſtrong, diſagreeable ſmell. A very conſiderable traffic is ſtill carried on in this perfume from Buſſorah, Calicut, and other places of India where the Civet is bred; from the Levant alſo, from Guinea, and eſpecially from Brazil in South America; though Buffon is of opinion that this animal is a native of the old continent only, and not to be found in a ſtate of nature in the new. The beſt Civet, however, as already obſerved, is furniſhed by the Dutch; but the demand for it ſeems greatly on the decline.

Civet is certainly a much more grateful perfume than muſk, to which it bears ſome reſemblance; and formerly it was preſcribed for the ſame medicinal purpoſes; but, at preſent, it is quite diſcontinued in pharmacy, and even proſcribed from the toilet by perſons of elegance and taſte.

The Civet, in it's natural ſtate, is ſaid to be a wild, fierce animal; and, though ſometimes tamed, it is never perfectly familiar. It is furniſhed with ſtrong cutting teeth; but it's claws are feeble and inflexible. It is a light, active creature; and, like the reſt of it's kind, preys on birds, and other ſmall animals over which it's ſtrength gives it aſcendency. It frequently creeps into farm-yards and offices in ſearch of poultry; it's eyes ſhine in the dark; and it probably enjoys more perfect viſion by night than by day.

When theſe creatures can no longer procure animal food, they ſubſiſt on roots and fruits. They breed very rapidly in their native climates, where the heat ſeems to facilitate their propagation: but, in our temperate latitudes, though they furniſh their perfume in great quantities, they ſeldom multiply; a convincing proof that it has no analogy with their appetite for generation.

CLADIUS. A name given by the ancients to the ſtag, or deer, when four years old, being then ſuppoſed to be arrived at full maturity. The Greeks had diſtinct appellations for every year's growth of this animal: in the firſt year, they called it nebrus; in the ſecond, pattalea; in the third, dicrotus; and, in the fourth, Cladius, or ceraſtes.

CLAKIS. A provincial appellation for the barnacle, a ſmall ſpecies of wild-gooſe.

CLAMS. The North American name of a ſpecies of ſhell, of which the wampum, or Indian money, is made.

CLARIAS. A fiſh of the ſilurus kind, commonly caught in the Nile, and eaten by the poorer ſort of people, but of an inſipid taſte. The tail is broad and forked, furniſhed with two horny appendages of a round figure and a hand's breadth in length.

CLARK-GOOSE. A ſpecies of wild-gooſe found in Zetland.

CLIO. A genus of ſea-worms belonging to the order of moluſca; the body of which is oblong, formed for ſwimming, and furniſhed with two oppoſite alæ of a membranaceous ſtructure.

CLOT-BIRD. A provincial name for the oenanthe.

CLUPEA. A fiſh of the order of malacopterygii, or ſoft-finned kind, in the Artedian ſyſtem; and of abdominales in the Linnæan, under which are claſſed eleven different ſpecies. The branchioſtege membrane on each ſide contains eight lines; the belly, which is very acute from the ſingular ſituation of the ſcales, appears as if ſerrated; and the back-fin is placed ſomewhat nearer to the ſnout than the tail. Artedi enumerates four ſpecies of this genus; namely, the common herring, the ſprat, the ſhad, and the anchovy.

COAITI. A ſpecies of monkey, diſtinguiſhed from others of that tribe by being deſtitute of a thumb, and conſequently having only four fingers on each of the two fore-paws. The tail, however, ſupplies this defect; and with it the creature flings itſelf from tree to tree with ſurprizing celerity. It has five toes on the feet, flat nails, a ſlender body, and a long tail. This animal, which is about eighteen inches in length, inhabits the vicinity of Carthagena, Brazil, and Peru.

Theſe monkies are extremely active, and ſeem to enliven the foreſts of America. In order to paſs from one tree to another when the branches are too far diſtant from each other for a leap, they form a kind of chain, by hanging down linked to each other by their tails, and ſwinging in that manner till the loweſt catches hold of a bough of the next tree, and draws up the reſt. Ulloa informs us, that they ſometimes paſs rivers in the ſame manner. Theſe animals have been tranſported into Europe, but ſuch is the delicacy of their frame, that they are unable to endure a variable climate.

COAL-FISH. This fiſh is common on the Britiſh coaſts, particularly in the north: they ſwarm round the Orkneys; and their fry is the principal ſubſiſtence of a great number of the poorer ſort of people.

The young of this fiſh make their firſt appearance on the Yorkſhire coaſt, in vaſt ſhoals, about the beginning of July, at which time they are nearly an inch and a half long. In Auguſt, they are from three to five inches in length, and are then eſteemed very delicate food; but, when about a year old, they grow ſo coarſe as to be very little regarded. Fiſh of that age are from twelve to fifteen inches long; and begin to aſſume a black colour near their gills, and on their backs, which increaſes in proportion to their age.

Though theſe fiſh are but little eſteemed when freſh, they are ſalted and dried for ſale; and ſometimes ſuch quantities of them viſit particular parts, that it is impoſſible to dip a pail in the ſea without catching ſome.

The Coal-fiſh, which is of a pretty elegant ſhape, generally grows to the length of two feet and a half, and weighs near thirty pounds. The head is ſmall; the under-jaw is ſomewhat longer than the upper; and the irides are ſilvery, and marked on one ſide with a black ſpot. There are three dorſal fins, the firſt conſiſting of fourteen rays, the ſecond of twenty, and the third of twenty-two. The pectoral fins conſiſt of eighteen rays, and the ventral of ſix; the firſt anal fin of twenty-two, and the ſecond of nineteen. The tail is broad and forked. The colour of theſe fiſh has been obſerved by naturaliſts to vary; in ſome, the back, noſe, dorſal fins, and tail, are of a deep black; the gill-covers are ſilver and black; the ventral and anal fins are white; and the belly is of the ſame colour. Others are of a duſky hue, and ſome brown; but in all the lateral line is ſtraight and white, and the lower-parts of the ventral and anal fins are of the ſame colour.

COAL-MOUSE, or BLACK TIT-MOUSE. The head of this bird is black, with a white ſpot on the hinder part; the back is of a greeniſh aſh-colour; the rump is a deep green; and the exterior edges

edges of the prime wing-feathers are alſo green. The weight of this bird is about a quarter of an ounce; it's length, from the tip of the bill to the extremity of the tail, is five inches; and the extenſion of it's wings is ſeven. It is diſtinguiſhed from all other tit-mice by it's inferior ſize.

COATI. A Brazilian name for the racoon. See RACOON.

COATIMONDI. A Brazilian animal, of which there are ſeveral varieties; though their natural hiſtory is ſo imperfectly known, that they have generally been blended under one general deſcription.

The Coatimondi is remarkable for the extreme length of it's ſnout, which in ſome meaſure reſembles that of a hog, but is elongated to a ſurprizing degree. It bears ſome affinity to the racoon, except that the neck and body are longer, that the fur is ſhorter, and that the eyes are ſmaller. But the principal diſtinction between this and all other animals, conſiſts in it's ſnout, which is moveable in every diviſion, and reverts at the extremity. Like the racoon, it reſts on it's hinder legs with great facility, and in this poſition carries it's food to it's mouth with both it's paws.

This animal has been known frequently to prey on it's own tail, which is rather longer than it's body: but this ſtrange appetite is not peculiar to the Coatimondi alone; the maucauco, and ſome of the monkey tribe, do the ſame, and ſeem to feel no pain in wounding a part of their body ſo remote from the centre of circulation.

The Coatimondi is about three feet long from the tip of the noſe to the extremity of the tail; the fore-paws are divided into five toes, the nails of which are long, black, crooked, and hollow like thoſe of the beaver; the under-parts of the fore-paws are covered with a ſoft ſkin; and at the ends of the heels there are ſeveral calloſities, half an inch in length, and one-tenth of an inch in breadth, which cling together like a marigold when it ſhuts up it's flower during the night. The hair is ſhort and unequal, and of a black colour on the back and ſome parts of the head, as well as on the paws and ſnout; but on the reſt of the body it contains a mixture of black and red, and under the neck and belly has ſomewhat of a golden tinge. The tail is ſurrounded with annular ſtripes of black and red; the eyes are ſmall; and the ears are round, like thoſe of a rat, and covered with very ſhort hair externally, but internally with long whitiſh hair. In each jaw there are ſix fore-teeth; the canine teeth are very large, of a greyiſh colour, and ſomewhat tranſparent; the mouth is large, reſembling that of a hog; and the under-jaw is much ſhorter than the upper.

This creature ſeems to be ſportive and amuſing in a tame ſtate; but, if left at liberty, will not only deſtroy poultry, but all other animals over which it's ſtrength gives it the ſuperiority. It is playful with it's keeper, but is nevertheleſs obſtinately bent againſt receiving any inſtruction; and neither threats nor careſſes can induce it to practiſe any arts to which it is not naturally inclined. When it ſleeps, it rolls itſelf up in a lump, and in that poſition often continues for fourteen or fifteen hours at a time.

COBITIS. A ſmall freſh-water fiſh, commonly called in England the loach. It greatly reſembles the gudgeon both in ſhape and colour, but is much ſmaller, being never more than three inches long. It's body is ſoft and ſlippery; it's tail is flat and broad; and it's ſcales are extremely minute. It's colour is brown, ſpotted with black; and from it's upper-jaw proceed three pair of beards. This fiſh, which is caught in the rivers of many different countries, is eſteemed very delicate food, eſpecially when young.

Artedi enumerates three ſpecies of the Cobitis; and Linnæus makes it a genus of abdominales, including five ſpecies.

COBITIS ACULEATA, or OXYRYNCHUS. This ſpecies is armed with two prickles on the coverings of each of it's gills, by means of which it moves very nimbly among ſtones at the bottoms of rivers.

COBIUS. The Greek appellation for the gobius marinus, or ſea-gudgeon, diſtinguiſhed by Artedi under the name of the blackiſh variegated gobius with fourteen rays on the ſecond fin of the back.

COBIUS LEUCOTERUS. A Greek name for the fiſh called gobius albus by modern writers. It ſeems to be a genuine ſpecies of the gobius; and is diſtinguiſhed by Artedi under the name of the gobius with a blue ventral fin, and the rays of the anterior back-fin riſing above the membrane; which ſeems to be a ſufficient diſcrimination from all the other ſpecies.

COBRA DE CIPO. An appellation given by the Portugueſe to an American ſerpent, more uſually known by it's Brazilian name boitjapo.

COBRA DE CORAL. An American ſerpent, called by the natives ibibiboca. It is about two feet long, and beautifully variegated with a fine red colour.

COBRA DE LAS CABECAS. A Portugueſe name for an American ſpecies of ſerpent of the amphiſbœna kind, the bite of which is very fatal. It lives under ground, and feeds on ants.

COBRAS DE CAPELLO. A Portugueſe name for a peculiar ſpecies of ſerpent called by authors ſerpens Indicus coronatus diademate; in Engliſh, the ſpectacle-ſnake, ſo named from the ſtrange reſemblance of the back of it's head and neck to a pair of ſpectacles. It grows ſomewhat larger than the common viper; the ſnout is long; the head is flat, or depreſſed; and the bite is very fatal. It is ſuppoſed by many that there is a ſtone lodged in the back-part of the head, which is a ſpecific for it's bite; but the ſtones generally known under the appellation of lapides Cobræ de Capello are all artificial compoſitions.

COBRE DE VERD. A Brazilian ſerpent, ſo called by the Portugueſe; but, by the natives, boiobi.

COCCINELLA. A genus of inſects of the coleoptera kind; the diſtinguiſhing characteriſtics of which are, that the antennæ are clavated and truncated; and that the thorax, with the exterior wings, which are marginated, form an hemiſpherical figure. There are ſeveral ſpecies of this genus, diſtinguiſhed by the colour and ſpots of their wings; among which are included all the lady-cows, commonly ſo called.

COCCOTHRAUSTES. A bird with a very ſhort body and large beak; whence it is called, in Engliſh, the groſs-beak, or hawfinch. It is conſiderably larger than the chaffinch; it's head is very large in proportion to it's body; and it's large beak, which tapers from a very thick baſe to an acute point, reſembles a funnel. This bird, which is common in Germany, lives in the woods and mountains during the ſummer; but in winter it retires to the champain country, and ſometimes viſits England during that ſeaſon. It feeds on the kernels contained in the ſtones of fruits, which it breaks with

with great dexterity; and alſo on the ſeeds of many different plants.

COCCOTHRAUSTES CRISTATA. An appellation generally given by naturaliſts to the Virginian nightingale; that bird being truly a Coccothrauſtes, though it has received the name of nightingale on account of the ſweetneſs of it's modulations.

COCCUS. A very comprehenſive genus of the hemiptera claſs of inſects; the characters of which are, that the trunk ariſes from the breaſt; that the body is ſetoſe behind; and that the two wings are placed erect, and only to be found in the males.

This genus comprehends all the progal inſects of Reaumur.

COCCUS ILEX. This inſect, which is known among druggiſts by the name of kermes, is a native of the berry-bearing ilex, a ſpecies of oak. It appears to be a membranaceous bladder of the ſize of a pea, ſmooth and ſhining, of a browniſh red colour, covered with very fine down or cinereous powder, and ſwelling with reddiſh eggs, which being fricated, pour out a crimſon fluid. It is found in the warmer climates during the months of May and June. In March, a ſpecies of inſects, leſs than the ſeeds of millet, is firſt perceptible, of an oblong oval form, only a little narrowed towards the tail. The upper part is convex, red, and marked with exceedingly minute golden ſpecks, and a few tranſverſe wrinkles. It has ſix feet and two moveable feelers, almoſt of an equal length with the body; it has black eyes; and a double tail, of the ſame length with the body. It adheres to the trunk, branches, and leaves of the tree; and becomes torpid and immoveable, ſwelling and increaſing in magnitude very ſenſibly. If viewed with a microſcope at this period of it's exiſtence, it appears of a crimſon colour, ſhining with golden ſpecks, and lying in a ſort of whitiſh down, which forms a kind of neſt. The back, which riſes very high, is of a round figure; and in the fore-part of the body three protuberances are perceived, of which that in the middle is thick and roundiſh, but thoſe on the ſides are more ſlender, and incurvated near the centre.

In the month of April the Coccus becomes as large as a common pea; it's membrane or ſkin is firmer; and the down, which at firſt lay in bands on the ſkin, covers the whole ſurface like a ſort of duſt; and then the animal appears no longer, but only a bladder full of pale and watery blood.

About the middle of May, the interior part of the bladder, under the belly of the animalcule, is furniſhed with oval grains, each about half the ſize of a poppy-ſeed, and of a pale reddiſh colour ſpeckled with gold: theſe conſiſt of a thin, white, tranſparent ſkin, full of a pale reddiſh fluid. On each bladder there are about two thouſand of theſe minute excreſcences, which in the following ſpring affix themſelves to the trunks and branches of the trees where they afterwards depoſit their eggs, and thus continue the round of nature.

When the Coccus has attained it's proper ſize, the ſkin of the belly is pulled up towards the back, leaving a vacant ſpace between the belly and the down, ſo as to exhibit the appearance of hog-lice half rolled up; and in this form the animal lays it's eggs, dies, and is dried up.

The Coccus, or kermes, is of two ſexes, and hitherto the females only have been deſcribed: but the males are very different, being a ſort of ſmall flies like gnats, with ſix feet, of which the four foremoſt are ſhort, and the other two long, divided into four joints, and armed with three crooked nails. On the head appear two feelers a line and a half long, which are flexible, ſtreaked, and articulated. The tail at the back part of the body is half a line long, and forked. The whole body is covered with two tranſparent wings; and the animal leaps about after the manner of a flea.

The harveſt of the Cocci is more plentiful or otherwiſe in proportion to the ſeverity of the winter, and their colour is alſo brighter and better in proportion to their vicinity to the ſea. This drug, uſed by dyers, is in much leſs repute ſince the importation of cochineal, which more effectually anſwers every wiſhed-for purpoſe.

COCCUS POLONICUS. This inſect may with propriety be called the cochineal of the northern part of the world; for, as the cochineal loves only hot climates, this creature delights ſolely in cold ones. It is collected for the uſe of dyers; but it is greatly inferior to the genuine cochineal; and the crops of it are not only much ſmaller, but gathered with more difficulty. Being principally found in Poland, it is thence called the Coccus Polonicus, or the ſcarlet grain of Poland. However, it is to be met with in many other cold countries; and may very poſſibly be produced in ſome of the more temperate ones, where it is not known, being concealed by nature from the eyes of common obſervers.

This Poliſh Coccus is found affixed to the root of a ſmall plant, and uſually to one kind of vegetable, which from this circumſtance has received the name of polygonum cocciferum. Authors inform us, that the ſame production is alſo found united to the roots of the mouſe-ear, rupture-wort, pimpernel, and pellitory of the wall; and that it is ſeldom diſcovered except in very dry ſituations.

Breynius publiſhed a very curious account of this inſect production in 1731; which inconteſtably proves it to be an animal, and affords abundant reaſons for referring it to the progal inſect claſs.

There are ſeveral other ſpecies of European Cocci, or kermes, mentioned by naturaliſts; but their accounts are ſo replete with confuſion, contradiction, and obſcurity, that we are induced to think the animal varies only from the particular plant on which it is found, and not from any eſſential difference in the ſpecies.

COCCYX. The Greek appellation of the fiſh called cuculus and lyra by the Latiniſts. It is a ſpecies of the trigla, and is diſtinguiſhed by Artedi under the name of the trigla entirely of a red colour, with a bifid ſnout, and ſtriated coverings to the gills.

COCHINEAL. An animal of the progal kind, of very great value on account of it's uſe in dyeing. This production has been variouſly deſcribed by different authors: ſome have ſuppoſed it to be a vegetable excreſcence from the tree on which it is found; while others have deſcribed it as a louſe, ſome as a bug, and others as a beetle. As the Cochineal appears on importation, it is of an irregular ſhape, convex on one ſide, and a little concave on the other; but both are marked with tranſverſe ſtreaks or wrinkles. It is generally of a ſcarlet colour internally, and of a blackiſh red externally; and ſometimes of a white, reddiſh, or aſh-colour, which is accounted the beſt; and is the produce of Mexico.

The Cochineal inſect is of an oval form, of the ſize

ſize of a ſmall pea, and furniſhed with ſix feet, and a ſnout or trunk. It brings forth it's young alive, and is nouriſhed by ſucking the juice of the plant on which it reſides. It's body conſiſts of ſeveral annulations; and, when once fixed on the plant, it continues immoveable, being ſubject to no farther change. Some pretend that there are two ſorts of theſe inſects: the one domeſtic, which is eſteemed the beſt; and the other wild, which is of a vivid colour. However, they appear to be the ſame: with this difference only, that the wild inſect feeds on uncultivated trees, without any aſſiſtance from man; whereas the domeſtic one is carefully removed to cultivated trees at ſtated intervals, where it imbibes a purer juice.

Thoſe perſons who tend theſe inſects, place them on the prickly-pear plant in a certain order, and are very aſſiduous in defending them from other inſects; and if any foreigners happen to mix with them, they are carefully ſeparated by means of foxes tails. Towards the cloſe of the year, when the rains and cold weather approach, which generally prove fatal to their exiſtence, the feeders take off the branches or leaves that are covered with the Cochineal, which have not attained their utmoſt degree of perfection, and keep them under ſhelter till the end of winter. Theſe leaves, which are very thick and juicy, ſupply the inſects with ſufficient nouriſhment while they are houſed. When milder weather returns, and theſe animals are about to exclude their young, the natives form neſts for them, of a ſize and conſtruction adapted to their natures and neceſſities; and place twelve of them in every neſt. Theſe neſts they affix to the thorns of the prickly-pear plant; and, in the ſpace of three or four days, the inſects bring forth their young, which leave the neſts in a very ſhort time afterwards, and creep on the branches of the plant till they find proper places to repoſe and receive their nouriſhment, and till the females are fecundated by the males, which, as in the cocci, differ very widely from the females, being winged inſects; whereas the others only creep, or are at moſt ſtationary. When they are impregnated, they produce a new offſpring; ſo that the propagator enjoys a triple harveſt every year.

When the native Americans have collected the Cochineal, they depoſit them in holes in the ground, where they deſtroy them by means of boiling water, and afterwards either dry them in the ſun, in ovens, or on hot plates. From theſe various methods of curing them the different colours obſervable in thoſe imported are chiefly produced. Theſe inſects, while alive, ſeem to be ſprinkled over with a white powder, which diſappears as ſoon as the boiling water is poured on them. Thoſe which are dried by preternatural heat are conſiderably blacker than the reſt; but it ſhould be underſtood that, whatever colours they poſſeſs, they are all females, the males, as already obſerved, being winged inſects, and of no value.

Cochineal is uſed in medicine as well as dyeing, and is ſaid to poſſeſs nearly the ſame virtues as the coccus or kermes; but is ſeldom adminiſtered alone, and is probably uſed rather for the ſake of it's colour than it's medical effects. When infuſed or boiled in water, Cochineal yields a crimſon tincture, inclining to a purple: fixed alkali renders the crimſon deeper, but leſſens it's luſtre; while volatile alkali heightens the colour, without diminiſhing it's luſtre. The beſt method of applying volatile alkali to this purpoſe in dyeing, is to dip the cloth, when dyed with Cochineal, in a ſolution of ſal ammoniac, and then to throw ſome pot-aſh into the ſolution, by which the volatile alkali of the ſal ammoniac is diſengaged.

Hellot obſerves, that if Cochineal, after the uſual pulverization, be mixed with one-fourth part of it's weight of pure dry cryſtals of tartar, and the mixture be levigated into an impalpable powder, the ſaving of the Cochineal, both for the crimſon and ſcarlet dye, will be about one part in four, without the ſmalleſt injury to the colour.

COCHLEA. A very large family of ſea-ſhells, divided by authors into three diſtinct genera, from the figure of their mouths, ſome of which are circular, others ſemicircular, and ſome oval. Theſe are expreſſed by the generical names Cochleæ lunares, Cochleæ ſemilunares, and Cochleæ ore depreſſo.

The characters of the Cochlea ore abſciſſo are the following: it has an univalve ſhell of a broad figure, with a conoid baſe, and an elevated ſummit, or ſometimes a plane and depreſſed one. It is umbilicated, and of a pearly colour within; and it's mouth is of an oval figure, ſometimes furniſhed with teeth, and at others deſtitute of any. The conic figure of theſe ſhells readily diſtinguiſhes them from all others.

The apex of ſeveral ſpecies of this genus is elevated to a conſiderable height, and forms various ſpiral turns, which are properly called ſabots by the French, and trochi by the authors of other nations. In others, which bear a greater reſemblance to the ſhape of common ſnails, the apex is leſs elevated; and, finally, in ſome of them, the apex is quite depreſſed. Theſe diſtinctions ſufficiently prove, that in general the elevation of the apex of ſhells is no genuine character of a genus; and, among the trochi, there is one ſingle ſpecies which is umbilicated, while all the reſt are otherwiſe.

From the figures of theſe ſhells, it will evidently appear, that the name Trochi, according to the common derivation of the word, but imperfectly expreſſes the ſeveral kinds, which are of very various formations. They are much better repreſented by the term Cochlea ore depreſſo, which conveys an idea of an abſolute diſtinction that takes place in all of them, but in no other order of ſhells whatever.

COCK. The name of the males of gallinaceous birds; the diſtinguiſhing characters of which are, that the feet have each four toes; that the front of the head is adorned with a comb; and that the wattles are double, naked, and flat.

Of all other birds, the Cock ſeems to have been firſt reclaimed from the foreſt, and taken under the protection of man, in order to ſupply the accidental failure of the luxuries or neceſſities of life. Having thus been longeſt ſubject to human cultivation, he exhibits an amazing number of varieties, ſcarcely two birds of this ſpecies being found to reſemble each other exactly in form and plumage. The tail, which is ſo great an ornament to the generality of theſe birds, is entirely wanting in others. The toes, in animals of the poultry kind, are uſually four; but in one ſpecies of the Cock, which abounds in the environs of Dorking in Surry, they amount to five. The feathers, which in moſt of thoſe animals we are acquainted with lie ſo ſmooth and in ſuch beautiful order, are in a peculiar breed all inverted, and ſtand contrary to their natural direction; and there is a ſpecies imported from Japan, which, inſtead of feathers, ſeems to be entirely covered with hair. The above, with many other di-

verſities, are to be found in this animal; all of which appear to be ſo many marks of this early priſoner's long and uninterrupted captivity.

At what period the Cock was firſt domeſticated in Europe, is a queſtion not properly aſcertained; but it is generally ſuppoſed that he was introduced into the weſtern part of the world from Perſia. Ariſtophanes calls the Cock the Perſian bird; and informs us that this fowl enjoyed that kingdom before ſome of it's earlieſt monarchs. The Cock was ſo early known in the moſt ſavage parts of Europe, that, under the Druidical diſpenſation, he was prohibited to be eaten among the ancient Britons. Indeed, the domeſtic fowl ſeems to have baniſhed the idea of the wild one. Perſia itſelf, from which we firſt received it, ſeems no longer to know it in it's natural form; and, if it were not ſometimes found wild in the woods of India, as well as in thoſe of the iſlands in the Indian ocean, it might perhaps be doubted in what form it firſt exiſted in a ſtate of nature. But thoſe doubts can no longer prevail, when we conſider that the Cock is actually ſeen, in his ancient ſtate of independence, in many iſlands of the Indian ocean, as well as in the foreſts on the coaſt of Malabar. In his wild ſtate his comb and wattles are yellow and purple, and his plumage is black and yellow. There is another remarkable peculiarity in thoſe of the Indian woods; namely, that their bones, when boiled, in Europe, are white; but, in India, as black as ebony: but whether this tincture proceeds from their food, (as the bones of animals, from their feeding on madder, are generally tinged with red) or from ſome other cauſe, it is not eaſy to determine.

When the Cock was firſt propagated in Europe, it is certain that there were diſtinctions which now no longer exiſt. The ancients eſteemed thoſe fowls whoſe plumage was reddiſh as invaluable, and conſidered the white ones as utterly unfit for domeſtic purpoſes; theſe they regarded as liable to become the prey of rapacious birds; and Ariſtotle thinks them leſs prolific than the former: indeed, this naturaliſt's diviſion of thoſe birds ſeems to be taken from their culinary uſes; the one ſort he calls generous and noble, being remarkable for fecundity; and the other ſort ignoble and uſeleſs, on account of their ſterility. Theſe diſtinctions, however, are very different from our modern notions of the generoſity of this animal; that which we call the Game-Cock being much leſs fruitful than the Dunghill-Cock, whom we regard with contempt on account of his comparative puſillanimity. It appears that the Athenians, as well as Europeans, had their Cock-matches; but it is probable that they did not make uſe of the ſame kinds on ſuch occaſions.

No animal poſſeſſes more courage than the Cock when oppoſed to any of his own ſpecies; and wherever refinement and poliſhed manners have not been univerſally introduced, Cock-fighting ſeems to have conſtituted a principal diverſion. In India, China, the Philippine Iſles, and over all the oriental regions, it conſtitutes the paſtime and amuſement even of kings and princes. Fortunately for national reputation, this barbarous diverſion is in England rapidly verging to decay; and, in a ſhort time, it will probably become the ſport of none but the loweſt claſſes. It is a prevailing opinion, that the breed of this country is more bold and valiant than any to be found elſewhere; but the truth is, that the Cocks of China are equal if not ſuperior in valour to the Engliſh ones, as well as ſtronger and larger. It is ſomewhat ſurprizing that thoſe men who venture hundreds, and ſometimes thouſands, on the proweſs of a ſingle fowl, have not taken every method of improving the breed; and particularly that of croſſing the ſtrain, as it is called, by a foreign mixture. But as Cock-fighting is a mean, ſavage, and ignoble amuſement, we would not wiſh to promote it by any inſtructions; ſince he who teaches the art of cruelty, can hardly be conſidered in any other light than as acceſſary to the fact.

The Cock's extraordinary courage is ſuppoſed to proceed from his being the moſt ſalacious of all other birds, as well as the only animal whoſe ſpirits are neither exhauſted nor abated by ſenſual gratification. However, he ſoon becomes old, his radical moiſture is conſumed, and in three or four years he becomes abſolutely unfit for the purpoſes of impregnation. 'Hens alſo,' to uſe the words of Willughby, 'as they, for the greateſt part of the year, daily lay eggs, cannot ſuffice for ſo many births; but for the moſt part, after three years, become effete and barren; for, when they have exhauſted all their ſeed-eggs, of which they had but a certain quantity from the beginning, they muſt neceſſarily ceaſe to lay, there being no new ones generated within.'

Hens ſeldom clutch a brood of chickens above once in a ſeaſon, though inſtances have been known when they have produced two. A domeſtic hen will lay upwards of two hundred eggs in a year, when properly ſupplied with food and water; and ſhe will continue to lay whether impregnated by the male or not: but eggs of this kind, though equally proper for food and all other domeſtic purpoſes, can never be brought to produce a living animal.

From a contemplation of the egg of the common hen, in which the yolk and the white are readily diſtinguiſhed, it will be eaſy to judge of the eggs of all other birds: but there is one kind of white which ſurrounds the yolk, and another exterior one; there are alſo ligaments which ſupport the yolk, near the centre of the egg; and two membranes, the one ſurrounding the yolk, and the other the white; and there is, moreover, a third and fourth, which encompaſs theſe interior ones; and a ſhell defending the whole; which laſt ſerves to preſerve the chicken from any accident till it is formed, and ready to leave it's priſon. The changes produced in this germ from time to time cannot poſſibly be diſcovered on account of the ſurrounding fluids. The white, however, is ſuppoſed to anſwer the purpoſe of milk, in feeding the young; and the yolk to be that part from which the growth proceeds.

The hen, if left to herſelf, forms but a very indifferent neſt; a hole ſcratched in the ground among a few buſhes is the only preparation ſhe uſually makes for this ſeaſon of her patient expectation. Nature, almoſt exhauſted by it's own fecundity, ſeems to inform her of the proper ſeaſon for hatching, which ſhe herſelf teſtifies by a clucking note, and by diſcontinuing to lay. Frugal houſewives, who find the eggs more profitable than the chickens, often practiſe arts in order to protract this clucking ſeaſon, and ſometimes entirely remove it. When the hen begins to cluck, they ſtint her in the quantity of her food; and, if that device does not produce the deſired effect, they plunge her into cold water. This effectually retards her hatching, but it often produces a cold; and, when that is the caſe,

caſe, the poor animal frequently ſinks under the operation.

If the hen is permitted to follow her own inclinations, ſhe will ſeldom lay above twenty eggs in the ſame neſt, without attempting to hatch them; but, if they are removed in proportion as they are laid, ſhe will ſtill continue in a vain expectation of increaſing the number. In a wild ſtate, ſhe ſeldom produces more than fifteen eggs; but then her food is procured with more difficulty, and ſhe is perhaps ſenſible of the care requiſite to maintain a large family.

When the hen begins to ſit, her patience and perſeverance are almoſt incredible: ſhe continues immoveable for ſome days; and even when compelled to quit the neſt by the cravings of nature, ſhe ſpeedily returns to her duty. During the time of her ſitting, ſhe carefully turns her eggs, and often places them in different ſituations; till, at the end of three weeks, or thereabouts, the young brood begin to indicate their arrival at maturity; and, by repeated efforts of their bills, perforate the ſhells, the hen ſtill continuing to ſit till they are all excluded. The ſtrongeſt and beſt chickens uſually firſt emerge from their priſons; the weaker ones follow after; but the moſt feeble of all generally die in this naſcent ſtate. The whole family being emancipated, the parent leads them forth in order to inſtruct them in the art of providing for themſelves. Her affection and dignity appear then to alter her very nature, and render her an amiable bird. No longer cowardly or voracious, ſhe boldly and indiſcriminately attacks every creature that appears to have any hoſtile intention towards her young, and abſtains from every kind of food which they are incapable of ſwallowing. When marching at the head of her little troop, ſhe demeans herſelf as their commander, and makes uſe of a variety of ſignificant notes for the purpoſe of ſummoning them to their food, as well as of warning them of approaching danger.

A certain mode of treatment has been deviſed, by which a hen that in the ordinary way produces but one dozen of young yearly, may generate as many chickens as eggs; and, conſequently, near two hundred. The artificial method of hatching chickens in ſtoves, as practiſed at Grand Cairo in Egypt, or in a chemical laboratory properly graduated, as has been effected by M. Reaumur, is the contrivance alluded to. The Egyptians build ſpacious ovens, of a figure very different from ours, in which they place a great number of eggs, and by means of a gentle fire communicate to them the ſame degree of heat as if they were under the hen. In this ſituation they remain till the uſual time of hatching; and by that means ten or twelve thouſand chickens have frequently been produced at a time. But in this colder climate, the great difficulty of rearing chickens does not conſiſt in hatching, but in clutching them after they are excluded. To obviate this difficulty, Reaumur has made uſe of what he calls a woollen hen; which in reality is nothing more than placing the chickens in a warm baſket, and throwing a thick woollen canopy over them; but the whole apparatus was attended with ſo great an expence, as to render the ſcheme rather an object of curioſity than profit. However, a much better ſubſtitute might be found, and that from among the ſpecies themſelves. Capons may be eaſily taught to clutch a freſh brood of chickens throughout the year; ſo that, when one little colony is thus reared, another may be brought to ſucceed it. Indeed, this method is frequently adopted. Firſt, the capon is ſo tamed, as to feed from a perſon's hand; then, towards evening, the feathers of his breaſt are removed, and the bare ſkin rubbed with nettles. After this proceſs, the chickens being put to him, they quickly run under his breaſt and belly; and, by their friction, probably allay the ſtinging pain which the nettles had before produced. This device is repeated two or three nights; till the animal conceiving an affection for the young brood thus ſent to his relief, continues to afford them that ſhelter they require. From this time the capon foſters the chickens like a hen, clutching them, feeding them, clucking, and rendering them every kind office natural to the moſt affectionate parent. A capon, habituated to this ſervice, will not eaſily reſign it; but, on the contrary, when one brood is grown up, he will ſuffer another nearly hatched to be put under him, and treat them with the ſame marks of tender regard.

The Cock, from his ſalacity, is generally ſuppoſed to be a ſhort-lived animal; but how long one of theſe birds will live, if left to itſelf, is not as yet well aſcertained by naturaliſts. As Cocks are kept only for the ſake of profit, and in a few years become almoſt uſeleſs, very few perſons, from mere motives of curioſity, make the tedious experiment of maintaining a proper number of them till they die naturally. Aldrovandus is of opinion that they would in general live ten years; nor is it indeed probable that they would exceed that age.

The fleſh of the Cock contains a great quantity of oil and volatile ſalt; but it is leſs eſteemed than that of the hen, or rather the pullet, being dryer, leſs agreeable to the palate, and more difficult of digeſtion. The fleſh of the pullet alſo contains much oil and volatile ſalt, and forms a moſt excellent aliment: it is pectoral, eaſy of digeſtion, and nutritive; it agrees with perſons of all ages and conſtitutions; but it is beſt adapted to thoſe who are delicate and ſedentary; labouring people requiring ſtronger, as well as more ſubſtantial food. The eggs, which are a common aliment, are equally beneficial in health and ſickneſs; they digeſt quickly, are very nouriſhing, abate the acrimony of the fluids, appeaſe coughs, and meliorate the voice: they are likewiſe ſalutary for the breath, and greatly exhilarate the ſpirits; but they loſe much of their virtues when boiled too hard.

As farms cannot with propriety be ſaid to be ſtocked without fowls, as well as beaſts, it will perhaps not be improper to exhibit ſome approved directions for the management of theſe domeſtic birds. Thoſe hens which are the beſt breeders, as well as layers, ſhould be ſelected; the oldeſt, indeed, are always the beſt ſitters, and the youngeſt the beſt layers; but no ſort will be fit for either purpoſe if kept too fat. The beſt age for ſetting hens is from two to five years old; and the beſt ſeaſon is February, though any month between that and October will anſwer.

If fowls are fed with buck or French wheat, or with hemp, canary, or millet-ſeed, they will, on account of this treatment, lay a greater number of eggs than ordinary; and buck-wheat, either whole or ground, made into a paſte, will fatten them very expeditiouſly: but, if chickens are intended to to be reared, each of them ſhould have two or three barley-corns immediately as they are taken from their neſts, and ſo continue to be fed till they are fit for fattening.

The Cock was conſecrated to Minerva, as the ſymbol

ſymbol of vigilance, to denote that genuine Wiſdom is always on her guard: he often accompanies Mercury, who is deemed an active divinity; and was commonly ſacrificed to the Lares, becauſe of his being brought up in habitations of which thoſe houſhold gods were the guardians.

Cock, Bantam. The Bantam Cock, though ſmall, is very courageous, and will encounter any creature that offers to oppoſe him. He has a reddiſh bill, fine red eyes, and a curious comb on the crown of his head. His ears are covered with a tuft of white feathers; and his neck and back with long ſtreaming orange-coloured feathers mixed with yellow. His breaſt, and the lower part of his belly, are black; his thighs are covered with long ſtiff feathers, reaching conſiderably below his knees; and his legs are inveſted with ſmall feathers as far as his toes. His tail conſiſts of ſtiff black feathers; among which there are two large ones which hang over the reſt in the ſhape of a ſickle. This bird, though it derives it's name from Bantam in the Eaſt Indies, from which place it was originally brought, is now pretty common in England.

The Bantam hen is ſmall and beautiful: her bill is yellowiſh; her comb is ſmall and pale; and there are a few white hairs on the crown of her head. The ſkin round her eyes is reddiſh and bare; and her ears are covered with a brown tuft of feathers. The reſt of her body, together with her wings and tail, are yellow variegated with dark brown; and her thighs and legs are feathered almoſt down to the toes. It muſt be obſerved, however, that the colour of the Bantam hen varies frequently.

Cock, Hamburgh. The Hamburgh Cock is a very ſtately fowl. His bill is thick at the baſe, but ends in an acute point; his eyes are of a fine yellow colour, encircled with dark-coloured feathers, under which there are tufts of black ones which cover his ears. His comb, which is reddiſh, reaches about half way over his head, the hind-part being covered with dark-coloured feathers inclining to black. His throat and gills are of the ſame colour, with an admixture of orange and red feathers waving round his neck, which are black at their extremities. His breaſt and belly are of a dark colour ſpotted with black; and his thighs, as well as the lower part of his belly, are of a ſhining velvet black. The ſuperior parts of his neck and back are of a darkiſh red; his tail conſiſts of red orange-coloured and ſhining black feathers; his legs are of a leaden hue; and the bottoms of his feet are yellow.

Cock, Indian, or Aldrovandus. The bill of this bird, which Marcgrave calls Mituporanga, is black at the extremity, but in every other part covered with a ſaffron-coloured ſkin of the ſame kind with that encircling his eyes. The feathers on his head and neck are of a deep black, and of a ſilky gloſs; and on the top of his head there are a ſort of ſpiral feathers, which, when erected, form a beautiful creſt: each of theſe feathers is two inches and a half in length, and two lines and a half in breadth. The reſt of his body is black, with a ſmall admixture of green; there are ſome white feathers about the vent; and his legs are cinereous.

Cock, Mountain. This bird, which is of the ſize of a peacock, appears to be of the pheaſant kind. His neck is long, and of a blackiſh colour intermixed with light aſh-coloured ſpots; his head is black; his beak is ſhort, broad, and elevated in the middle; his breaſt and belly are black; and his wing-feathers are pretty long, and of a duſky blackiſh colour. The feathers under his wings, as well as his thighs, are whitiſh; his legs are covered with feathers of a duſky hue down to the toes; and there are ſeveral white ſpots on his tail, which, according to ſome authors, increaſe in proportion to his age.

The Cock of the Mountains is a native of various parts of Europe, and particularly of Ireland and Wales; but he is never ſeen in England except through mere accident. His fleſh is eſteemed very delicate food.

COCKATOO. A very beautiful race of birds of the parrot kind, diſtinguiſhed from all others by their elegant creſts. There are ſeveral diſtinct ſpecies.

Cockatoo, Greater. This ſpecies, which is about the ſize of the raven, has a large, ſtrong bill, with a ſkin over the baſe of the upper chap, where the noſtrils are placed. Both the ſkin and the bill are of a blueiſh-black colour; and the head is large in proportion to the bill. The eyes, which are dark, are ſurrounded with a bare aſh-coloured ſkin; the feathers of the head are very long and looſe; but the top ones, which are the longeſt, the bird can erect or depreſs at pleaſure. The plumage of the Cockatoo is in general white, though tinctured with other colours in ſeveral parts. The tail is ſhort, and conſiſts of feathers of an equal length; the legs and feet are of a lead colour; and the toes reſemble thoſe of the parrot, of which bird the Cockatoo is a variety. It is a native of the Eaſt Indies; and is frequently heard to cry 'Cockatoo,' with great diſtinctneſs of articulation.

Cockatoo, Great Black. This bird is very large, being equal in ſize to any of the kind. The bill is ſtrong, very much arched, and of a duſky brown colour, with an angle on each ſide of the upper mandible. The eyes are dark; the ſides of the head, from the eyes to the under part of the bill, are covered with a red bare corrugated ſkin; the creſt is of a lightiſh grey colour, the feathers of which are pointed and reflected upwards at their tips; and are either raiſed or depreſſed at the pleaſure of the bird. The whole plumage, from the creſt downwards, is of a blueiſh-black or dark lead-colour, rather paler on the under ſide than on the back and wings; the tail is pretty long; and the legs and feet are of a browniſh-black hue, and covered with a rough ſcaly ſkin.

This bird is a native of Ceylon, and other oriental regions; and a repreſentation of it, drawn from the life, was firſt ſent to Europe by that very induſtrious naturaliſt John Gideon Loten, Eſq. a Dutch governor in India.

Cockatoo, White, Yellow-Creſted. The bill of this ſpecies is of a dark aſh-colour, ſerrated on the ſides of the upper mandible. There are very long fine yellow feathers on the top of the head, which the bird ſometimes raiſes to a ſplendid creſt. The eyes are placed in ſpaces of light lead-coloured bare ſkin; and the pupils are black, their irides being a bright orange. Beneath each eye there is a large ſpot of yellow feathers; and the reſt of the plumage, from the head downwards, is white, except a faint ſhade of yellow on the breaſt, the ſides under the wings, and the inſides of the wings. The wings and tail are almoſt of an equal length; and the legs and feet are covered with a dark blueiſh lead-coloured ſcaly ſkin.

Cockatoo, White, Red-Vented. This bird is about the ſize of a common parrot; the orbit of the

1. GREAT BLACK COCKATOO. 2. GREATER COCKATOO. 3. WHITE RED-VENTED COCKATOO.

4. WHITE YELLOW-CRESTED COCKATOO.

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the eye is a yellowiſh red; the bill is white tipped with yellow; and the vent is white barred with crimſon. The creſt is white, except a few feathers underneath, which ſerve as a ſpring to ſupport it when erected; and the reſt of the plumage is of the ſame colour, with a yellowiſh tint towards the quill-ends of the feathers.

COCKLE. A bivalve ſhell, nearly equilateral and equivalve. The animal is a tethys; and there are two teeth, one on each ſide of the beak. Of the Cockle there are various ſpecies; which, however, may all be comprehended under the following, viz. articulate, multarticulate, heart, truncated, and ſquare Cockles.

Cockle, Aculeated. This ſhell has high ribs diverging from the hinge to the edges; each rib is furrowed in the middle, and, near the circumference, beſet with large, ſtrong, and hollowed proceſſes. One ſide of the ſhell projects farther than the other, and forms an angle. This variety, which is as large as a man's fiſt, is found near the Weſtern and Orkney iſlands; and the colour is a yellowiſh brown.

Cockle, Echinated. This ſhell is leſs than the preceding, being little more than ſix inches in circumference; the ribs, which are only ſixteen in number, are echinated higher up; and the colour is white.

Cockle, Edible. This ſhell has twenty-eight depreſſed ribs, tranſverſely ſtriated; and is found on all ſandy coaſts, lodged a little beneath the ſurface, the ſituation being generally indicated by a depreſſed ſpot.

Cockle, Fringed. The colour of this ſhell is pure white; it is of a very brittle nature, having eighteen ribs riſing into thinner ſpines; and it's ſize is no larger than that of a hazel-nut.

Cockle, Smooth. The figure of this ſhell is ſuboval, and ſomewhat depreſſed; the colour is a deep brown with faint longitudinal ſtriæ; and a few tranſverſal, concealed by a fine epidermis. It meaſures about ſix inches and a half in circumference.

COCK-ROACH. An inſect of the beetle kind, very miſchievous in warm climates, but eſpecially on board of ſhips. Cateſby, in his Hiſtory of Carolina, mentions a particular ſpecies under the name of blatta maxima fuſca peltata, which has been accurately deſcribed by the ingenious Edwards under the appellation of the Greater Cock-Roach. The head is covered with a kind of ſhield, of a light brown colour round it's borders, and black in the middle, from which proceed two other ſhields of the ſame brown colour, and duſky in their centres, covering part of the upper ſide of the body, and exhibiting the appearance of ſhort wings. The abdomen, or lower part of the body, which is of a reddiſh brown, and compoſed of eight annulations, is very flat, and ſerrated on it's ſides. The head, which is black, is only ſeen from beneath; but the eyes are brown. The horns are nearly two inches long; the legs, which are ſix in number, are of a reddiſh brown colour, each conſiſting of three joints, thoſe next the body being ſmooth; the middle joints are beſet with ſharp prickles; the exterior ones of the feet are rough and hairy; and there are two ſharp claws at their extremities.

COCOI. A very beautiful Brazilian bird of the ardea kind, about the ſize of the common ſtork, the fleſh of which is deliciouſly agreeable to the palate.

COCROTALEON. An animal generated between the hyæna and the lioneſs, and ſo called by the ancients. This creature is deſcribed as poſſeſſing many qualities peculiar to the mantichora; and, according to ſome naturaliſts, is only another name for the ſame animal. It is likewiſe called leocrocotta; and ſometimes ſimply crocotta, or corcotta.

COD. The largeſt of the genus of aſelli, called by authors aſellus maximus, and ſometimes aſellus varius, ſive ſtriatus: but, according to Artedi, it is a ſpecies of the gadus; and is diſtinguiſhed from others of that genus by having a beard at the mouth, the ſuperior jaw longer than the inferior, and an unfurcated tail.

Theſe fiſh inhabit only the northern parts of the world, and appear to be confined between the latitudes fifty and ſixty-ſix; thoſe which are caught on either ſide of theſe limits being few in number, and very indifferent in quality.

Immenſe quantities of Cod-fiſh are found on the banks of Newfoundland, and the ſand-banks which lie off the coaſts of Cape Breton, Nova Scotia, and New England; and it is probable that they reſort thither on account of the vaſt quantities of worms produced in theſe ſandy bottoms. Another cauſe of their particular attachment to theſe ſpots, is their vicinity to the polar ſeas, whither they reſort for the purpoſe of ſpawning.

The Cod-banks of Newfoundland are a ſort of ſubmarine mountains. One of them is deſervedly called the Great Bank, as it extends four hundred and fifty miles in length, and upwards of one hundred in breadth: it lies about ſeventy-five miles from the iſland of Newfoundland, in North America; and the largeſt, beſt-flavoured, and fatteſt Cod, are found on it's ſouth ſide, thoſe on the north being in every reſpect inferior. The ſeaſon for catching them on this bank is from the commencement of February to the beginning of May. Thoſe which are caught in May and June will keep tolerably well; but ſuch as are taken in July, Auguſt, and September, unleſs extraordinary precaution is uſed, quickly ſpoil. Sometimes, indeed, this fiſhery ceaſes in a month or ſix weeks; but, at others, it laſts more than half a year.

On the approach of Lent, the fiſhermen haſten home, though they have not compleated half their cargo, in order to attend the markets, which at that ſeaſon are very advantageous. Sometimes, however, they effect a ſecond voyage before others have collected a ſufficient cargo for the firſt. The Cod are all taken with lines and hooks baited with the entrails of their own ſpecies, a ſmall fiſh called capelin, and a ſhell-fiſh named chams; and an expert fiſherman frequently catches four or five hundred in a day.

There are abundance of Cod-fiſh on the ſouth and weſt coaſts of Iceland, but very few are found on the north. They are likewiſe caught in great plenty on the coaſts of Norway, in the Baltic, and off the Orkneys and Weſtern Iſles; beyond which latitudes their numbers gradually decreaſe as they advance towards the ſouth; and before reaching the Straits of Gibraltar, they totally diſappear.

Previous to the diſcovery of Newfoundland, the principal fiſheries of Cod centered in the ſeas of Iceland and the Hebrides, which were the grand reſort of ſhips of all commercial nations; but the greateſt abundance was found near Iceland. This very evidently appears from the circumſtance of Queen Elizabeth's ſoliciting permiſſion of Chriſ-

tian VII. of Denmark to fiſh in thoſe ſeas; though ſhe afterwards repented of her requeſt, and inſtructed her ambaſſadors at that court to inſiſt on the privilege of a free and univerſal fiſhery.

Providence has graciouſly ordained, that this moſt beneficial fiſh to mankind, ſhould be ſo extremely prolific as to ſupply more than the deficiencies of the multitudes annually taken. Leewenhoek counted nine million three hundred and eighty-four thouſand eggs in a Cod-fiſh of a middling ſize. They begin to ſpawn in our ſeas in the month of January, and depoſit their eggs in rough ground, among rocks and ſhelves.

Cod-fiſh of a middling ſize are moſt eſteemed for the table; and they are to be choſen by their plumpneſs or roundneſs, eſpecially near their tails; and by the regular undulated appearance of their ſides, as if they were ribbed. Theſe, and other fiſh of this genus, are reckoned to be in ſeaſon during winter; but the glutinous parts about their heads loſe much of their delicate flavour after having been removed twenty-four hours from their native element. The general weight of thoſe taken on our coaſts is from fourteen to forty pounds, though they ſometimes exceed ſixty.

The Cod-fiſh is ſhort in proportion to it's bulk; the belly is very large and prominent; the jaws are almoſt of an equal length, with a ſmall beard on the lower; the teeth are diſpoſed in the palate, as well as the jaws; and the eyes are large. It has three ſoft fins on the back; the ventral fins are very ſlender, and the anal are two in number. It is aſh-coloured on the back and ſides, and uſually ſpotted with yellow; the belly is commonly white; though the fiſh ſometimes varies not only in colour, but alſo in the conformation of the head and other parts; and the ſide-line is broad, ſtraight, and white, till it reaches oppoſite the vent, when it curves towards the tail.

Cod-fiſh are cured on ſhip-board in the following manner. Their heads are cut off, their bellies opened, and their guts taken out; and then they are laid ſide by ſide, head and tail, at the bottom of a veſſel, for about eight or ten feet ſquare. One layer being compleated, it is covered with ſalt, and another laid on that, which is covered as before. All the fiſh taken in one day are thus diſpoſed of; but great caution is uſed not to intermix thoſe which have been caught on different days. They remain thus for three or four days, when they are removed into another part of the veſſel, and ſalted again; and in this ſtate they are ſuffered to continue till the veſſel has either got her full cargo, or till ſhe departs for her deſtined port. Sometimes, however, they are put into barrels, and packed up; and in that caſe they are denominated Barrel-Cod.

Theſe fiſh, however, are not all cured with ſalt: ſome are carried on ſhore, and dried on the beach; namely, ſuch as are fiſhed for along the coaſt of Placentia in Newfoundland, from Cape Race to the Bay of Experts, within which limits there are ſeveral commodious harbours and places fit for drying them. Thoſe who intend to dry them in the ſun always fiſh for them during the ſummer ſeaſon. A ſmaller ſort of theſe fiſh is uſually ſelected for drying; becauſe, as they ſooner imbibe the ſalt, they are beſt adapted for that purpoſe.

The tripes, roes, and tongues of the Cod-fiſh, are alſo ſalted and barrelled; the latter of which are uſually thrown into the ſea, in order to draw other fiſh to a particular ſpot, eſpecially pilchards, for which they conſtitute an excellent lure. An oil which is extracted from the Cod is ſaid to anſwer all the purpoſes of train-oil, and is much uſed by curriers.

CODA LANCEA. An appellation given by Italian naturaliſts to the ſpecies of duck called by others the anas caudacuta, and vulgarly known in ſome parts of England by the names of the cracker or ſea-pheaſant. It differs from all other birds of the duck kind in the peculiar ſtructure of it's tail, which has two feathers longer than the reſt, and terminating in a point.

CODDY MODDY. A bird of the gull kind ſometimes called the winter mew. It's length, from the tip of the bill to the extremity of the tail, is eighteen inches; and the expanſion of it's wings is three feet nine inches. The bill, which is two inches long, and very ſlender, is black at the tip, and whitiſh towards the baſe. The irides are of a hazel colour; the crown of the head, and hind-part and ſides of the neck, are white marked with oblong duſky ſpots; the forehead, the throat, the middle of the breaſt, the belly, and the rump, are white; and the back and ſcapulars are a pale grey, the laſt being alſo ſpotted with brown. The coverts of the wings are a pale brown, edged with white; the firſt quill-feather is black, and the ſucceeding ones are tipped with white; the tail is white, and croſſed near the extremity with a black bar; and the legs are of a dirty blueiſh white.

During winter, this bird frequents thoſe moiſt meadows which are ſituated in the interior parts of England. That gelatinous ſubſtance commonly known by the name of ſtar-ſhot, or ſtar-jelly, is generally ſuppoſed to owe it's origin either to this bird, or to ſome other of it's kind; and is in fact nothing elſe but the indigeſted remains of earth-worms, on which theſe birds feed, and which they frequently evacuate.

COGNIOL. A name ſometimes given to the fiſh more uſually called colias; a kind of mackerel which differs principally from the other ſpecies in being of an inferior ſize.

COINUS. An appellation given by ſome conchologiſts to the genus of ſhells called porcellana and concha venerea.

COJUMERO. A term uſed by ſome naturaliſts to denote the manati or ſea-cow.

COLCUICUILTIC. The American name for a bird of the partridge kind deſcribed by Nieremberg. It is variegated with black, white, and red, and exhibits a very beautiful appearance. Theſe colours are for the moſt part not diſpoſed in ſpots, but in longitudinal lines, on the back; on the belly, however, they aſſume the form of ſmall ſhort lines. The fleſh of this bird is highly eſteemed.

COLD-FINCH. A bird of the œnanthe kind, or nearly approximating to that genus, frequently ſeen near the Peak in Derbyſhire. The belly is white; the breaſt is a yellowiſh brown; and the head and back are a browniſh or greeniſh grey. The long feathers of the tail and wings are black, but with ſome variegation of white towards their extremities; and the bill is ſlender, ſtraight, and ſomewhat ridged. It feeds on worms and other inſects.

COLE-FISH. The aſellus niger of authors; and by Linnæus ranked as a ſpecies of gadus. See Coal-Fish.

COLE-MOUSE. A ſmall bird of the titmouſe kind. See Coal-Mouse.

COLE-PERCH. The name of a ſmall fiſh caught near Dantzick, and ſeveral other places; and much

much eſteemed for it's delicate flavour. It bears a ſtrong reſemblance to the common perch, except that it is inferior in magnitude, has a larger head, and a greater variety of colours.

COLEOPTERA. An order of inſects comprehending all thoſe which have four wings; the external pair of which is hard, rigid, and opaque, and forms a kind of caſe for the interior pair; and whoſe mouths conſiſt of two tranſverſe jaws.

Theſe animals are diſtinguiſhed in Engliſh under the general appellation of beetles; of which naturaliſts have eſtabliſhed a great number of genera, from the different conformations of their antennæ or horns, and other general marks, ſuch as the ſcarabæus or beetle properly ſo called, the dermeſtes, caſſida, coccinella, chryſomela, dytiſcus, and tenebrio.

COLIBRI. A bird very remarkable for it's beauty, it's figure, it's manner of living, and the minuteneſs of it's ſize. It ſubſiſts on flowers, on which it ſeldom alights, but extracts honey from their nectaria by means of it's long, fine, and delicate tongue. There are ſome ſpecies of this bird which poſſeſs all the colours of precious ſtones, as well as the fineſt and moſt beautiful plumage that can be imagined. They fly with great rapidity; and are heard before they can be diſtinguiſhed by the eye, making a kind of humming noiſe, from whence they are called humming-birds. See HUMMING-BIRD.

COLIC SHELL. A name given by ſome authors to the porcellana, or concha venerea, from it's ſuppoſed efficacy in curing the venereal diſeaſe.

COLIN. An American bird, called by the generality of writers the quail; but ſuppoſed by Nieremberg to be rather a kind of partridge. There are ſeveral diſtinct ſpecies of this bird, all very common in the Spaniſh Weſt Indies, and much eſteemed for the delicacy of their fleſh.

COLIOU. An oriental bird deſcribed by Sonnerat, about the ſize of the European groſsbeak. The head, neck, back, wings, and tail, are cinereous, with a tinge of yellow; the breaſt is of the ſame colour, and barred with black; the lower part of the belly and the top of the tail are reddiſh; the wings extend only a little beyond the origin of the tail, which is extremely long, and compoſed of twelve feathers of unequal lengths; the bill is black; the feet are of a pale fleſh-colour; and the feathers which cover the head are narrow and long, and compoſe a creſt which the bird can elevate or depreſs at pleaſure.

COLLURIO. The name by which ſome authors have called the lanius or butcher-bird; the ſmalleſt, as well as one of the moſt deſtructive, of all the rapacious tribe.

COLMESTRE. A bird of the lagopus kind, more uſually called otomo; and ſuppoſed to differ very little from the lagopus, except in changing it's colour during the ſummer ſeaſon.

COLOCOLO. The Philippine name for a ſpecies of bird called alſo caſſili, and corvus fluviatilis or the water-raven. It's figure very much reſembles that of the common raven; but it is truly an amphibious bird, living principally under water. It's colour is black; it's neck is remarkably long; and it feeds on various kinds of fiſh, frogs, and ſerpents. The Colocolo is ſometimes ſeen under water in tranſparent ſtreams, where it appears to be perfectly at eaſe, and running about with great ſwiftneſs; and, at other times, it aſcends to the ſurface, and dries it's wings in the air and ſunſhine.

COLPISCIS. An appellation given by ſome authors to the falx Venetorum, or ſickle-fiſh, commonly called by the Venetians the marmot-fiſh.

COLUBER. The name of a very numerous genus of ſerpents; the abdomen of which is covered with ſcuta, and the under part of the tail with ſquamæ or ſcales. See VIPER.

COLUM. A bird very common at Surat in the Eaſt Indies, and ſuppoſed to be a ſpecies of the crane. It has a remarkable flexion in the aſpera arteria; which the ingenious Dr. Parſons obſerves may ſerve for the retention of inſpired air, while it plunges deep into the water in queſt of food, or traverſes different climates through various degrees of rarified and condenſed air.

COLUMBA GREENLANDICA. An appellation given by ſome authors to a ſmall, well-taſted aquatic fowl, called in Engliſh the ſea turtle-dove.

COLUMBA MARINA, or SEA-DOVE. An Eaſt Indian ſea-fiſh, apparently a ſpecies of the orbis or moon-fiſh. It receives it's name from the reſemblance which it's head and prominent cheſt bear to thoſe of the dove. It has no ſcales, but is variegated with ſeveral marks placed in a very ſingular manner on the back and ſides. It is a ſcarce fiſh, and but little eſteemed, being coarſe and ill-taſted.

COLYMBIS. An appellation given by Bellonius to a ſpecies of duck remarkable for a large tuft of feathers behind it's head, on which account it is called in Engliſh the tufted-duck; but, by the generality of authors, capo negro, it's Venetian name.

COLYMBUS. The name of a diſtinct genus of birds in the Linnæan ſyſtem, of the order of anſeres. See DIVER.

COMB-BIRD. A gallinaceous bird, of the ſize of the turkey-cock, found near the Rivers Senegal and Gambia in Africa; the plumage of which is grey, ſtreaked with black and white; and the wings are very large, but ſeldom uſed in flight. This bird has a very ſolemn and ſtately walk, holding it's head erect, which is covered with a kind of ſoft hair about four inches long, depending on each ſide, and curled at the points with the greateſt regularity and beauty. It's tail, however, is it's principal ornament; the upper part of it being as black as jet and very brilliant, and the under as white as ivory. Of the feathers of the Comb-Bird the negroes make elegant fans.

COMBER. A Corniſh fiſh of a very ſlender ſhape. The dorſal fin has twenty ſpiny and eleven ſoft rays, the pectoral fourteen, the ventral five, and the anal three ſpiny and ſeven ſoft; and the tail is rounded. The back, fins, and tail, are red; the belly is yellow; and beneath the lateral line there runs a parallel, ſmooth, even ſtripe, from the gills to the tail, of a ſilvery hue.

COMEDONES. An appellation given to a ſpecies of worms with which children in Miſnia, and ſome other countries, are dreadfully afflicted; and of which Hoffman, in his treatiſe of endemial diſeaſes, gives the following account. 'Children in the country are frequently ſeized with a ſort of tabes, which ſo waſtes their fleſh that they appear mere ſkeletons. The common people generally believe theſe children to be under the influence of witchcraft; but ſuch as have accurately examined into the nature of the malady, have diſcovered that it originates from certain worms, reſembling black hairs

hairs or cords, lodged under the ſkin. When the ſkin is rubbed with honey in a bath, or any warm place, theſe vermin will make their appearance; but, when it is contracted by cold, they keep concealed within.'

COMPITA. A name by which ſome naturaliſts have called the colymbus major, or fiſanelle, the great Venetian diver.

CONCHA. A genus of bivalve ſhells, containing a tethys. This genus, which is very comprehenſive, includes the oyſter, chama, muſcle, heart-ſhell, pecten, ſolen, &c.

CONCHA FORTIFICATA. A name given by ſome authors to the genus of ſhells called murex by others.

CONCHA GLOBOSA. A large genus of ſhells called dolium by the generality of authors.

CONCHA SPECTRORUM. A ſpecies of voluta, ſo called from ſome ſtrange figures delineated on it's ſurface, repreſenting caricaturas of terrible phantoms. It is a very elegant ſhell, and of a moderate ſize; the ground is white; and the figures, which are reddiſh, form three large and broad bands, which ſurround the ſhell at top and bottom, and in the centre; and between theſe there are ſeveral ſeries of ſmall ſpots. This ſhell is very rarely met with, and highly eſteemed.

CONCHA VENERIS. A name expreſſive of ſeveral ſpecies of the chama. The ſhell is univalve and wreathed, and has a ſmall longitudinal and denticulated chink or aperture. It is alſo called Concha Porcellana, from it's aperture's reſembling in ſome meaſure the mouth of a hog; and Concha Erythræa, from it's being found in the Red Sea, near Erythræum. It appears that the ancients uſed the incloſed fiſh by way of aliment; and Mundius aſſerts, that it poſſeſſes a provocative quality. The ſhell itſelf, pulverized, has been deemed efficacious in ſeveral complaints; but apothecaries generally ſubſtitute cockles in it's ſtead, which are imagined to poſſeſs nearly the ſame ſpecific virtues.

CONCHÆ ANOMIÆ. A genus of ſhell-fiſh principally found in a foſſil ſtate. See ANOMIÆ CONCHÆ.

CONCHÆ MARGARITIFERÆ. An appellation ſometimes given to the mytuli, which produce pearls. See MUSCLE.

CONDOMA. An anomalous creature of the goat kind, ſo called by Buffon. It is ſuppoſed to be equal in ſize to the largeſt ſtag, but has hollow horns like thoſe of the goat claſs, with varied flexures reſembling thoſe of the antelope: theſe are above three feet long; and, at their extremities, about two feet aſunder. Along the back of the animal there runs a white liſt, which terminates at the inſertion of the tail; and another of the ſame colour croſſes this liſt at the bottom of the neck, which it entirely ſurrounds. Two more rings of the ſame kind encircle the body; one behind the fore-legs, and the other running parallel to it before the hinder. The colour of the reſt of the body is greyiſh, except the belly, which is white. The creature has alſo a long grey beard; and it's legs, though long, are well proportioned.

CONDOR. Naturaliſts are divided in their opinions, whether this vaſt bird, which is a native of South America, ſhould be referred to the eagle or the vulture tribe. It's aſtoniſhing ſtrength and rapacity might naturally enough plead for it's ranking among the former; but the baldneſs of it's head and neck might alſo be conceived to ſink it to the latter. It is evident, however, that if magnitude and ſtrength, combined with rapidity of flight and rapacity of diſpoſition, deſerve pre-eminence, no bird in the world can be placed in competition with the Condor. It poſſeſſes, in a much greater degree than the eagle, all thoſe qualities which render it formidable, not only to the feathered kind, but alſo to quadrupeds, and even to man. Several authors aſſert, that the expanſion of the wings of this creature is eighteen feet. The beak is ſo ſtrong as to pierce through the body of a cow; and two of theſe birds will finiſh an ox at a ſingle repaſt. The Condor is by no means terrified at the approach of any of the human form: however, through the benignity of Providence, there are but few of the ſpecies; for, were they at all numerous, every order of animals would probably wage an unſucceſsful conteſt againſt them. The Indians aſſure us, that one of theſe enormous birds will carry off a deer, or a young calf, in it's talons, with the ſame facility that an eagle does a hare or a rabbit; that their ſight is very piercing, and their appearance terrible; that as they require a very large ſpace for the extenſion of their wings, they ſeldom frequent foreſts; but that they are much attached to the ſea-ſhore, and the banks of rivers, whither they deſcend from their aerial neſts on the ſummits of the higheſt mountains. The moſt modern accounts, however, inform us, that theſe formidable birds frequent the ſea-coaſts only at certain ſeaſons, namely, when their prey happens to fail them on the land; and that they then feed on dead fiſh, and ſuch other nutritious ſubſtances as the waves happen to throw on the beach.

Condamine has frequently obſerved theſe birds in ſeveral parts of the mountains of Quito, in Spaniſh America, hovering over a flock of ſheep, and probably meditating their deſtruction. Indeed, the Spaniards are ever apprehenſive leſt theſe rapacious animals ſhould prey on their children; and it is ſaid that the Americans frequently hold out to one or other of them, as a lure, the figure of a child, compoſed of a very glutinous clay; on which it deſcends with exceſſive rapidity, and ſtrikes it's pounces ſo deeply into it, that it becomes immediately entangled.

Mr. Steary, (the maſter of a ſhip) as he navigated the coaſts of Chili, in thirty-three degrees of ſouth latitude, obſerved one of theſe birds ſitting on a high cliff near the ſhore, which ſome of the ſhip's company ſhot at with a ball, and killed. It's wings, when extended, meaſured ſixteen feet; and one of the feathers, which was preſented by the captain to Sir Hans Sloane, and is depoſited in the Britiſh Muſeum, meaſures two feet four inches in length; and, in the largeſt part, is an inch and a half in circumference.

The only circumſtantial account, however, of this amazing bird, is given us by P. Feuillée, who deſcribes it in the following accurate manner. 'In the valley of Ilo, in Peru, I diſcovered a Condor, perched on a high rock before me: I approached within muſquet-ſhot, and fired; but as my piece was only charged with ſwan-ſhot, the lead was not able ſufficiently to penetrate the bird's feathers. I perceived, however, by it's manner of flying, that it was wounded; and it was with apparent difficulty that it reached another rock, about five hundred yards diſtant, on the ſea-ſhore. I therefore charged again with ball, and hit the bird under the throat, which

which made it mine. I accordingly ran up to ſeize it; but even in death it was terrible, and defended itſelf on it's back, with it's claws extended againſt me, ſo that I could ſcarcely deviſe the means of ſeizing it with ſecurity. Had it not been mortally wounded, I might have found this a dangerous enterprize; but having at laſt dragged it down from the rock, with the aſſiſtance of a ſeaman, I carried it to my tent, to make a coloured drawing.

'The wings of this bird, which I meaſured very exactly, were twelve feet three inches Engliſh from tip to tip. The great feathers were about two feet four inches long, of a beautiful ſhining black colour. The thickneſs of the beak was proportionable to the reſt of the body; the length about four inches; the point hooked downwards, and white at it's extremity, but in every other part black as jet. A ſhort brown-coloured down covered the head; the eyes were black, and ſurrounded with a circle of reddiſh brown. The feathers on the neck, breaſt, and wings, were of a light brown; and thoſe on the back rather darker. The thighs were covered with brown feathers down to the knee; the thigh-bone was ten inches long; the leg five inches: the toes were three before, and one behind; that behind was an inch and a half long, and the claw with which it was armed was black, and occupied one half of the length. The other claws were in the ſame proportion; and both the legs and toes were covered with black ſcales; but in the laſt the ſcales were larger.

'Theſe birds uſually keep in the mountains, where they find their prey; they never deſcend to the ſea-ſhore but in the rainy ſeaſon; for as they are very ſenſible of cold, they retire there for additional warmth. Though theſe mountains they inhabit are ſituated in the torrid zone, the cold is often extremely ſevere, and they are covered with ſnow during a great part of the year.

'The ſmall quantity of nouriſhment which theſe birds find on the ſea-coaſt, except when the tempeſt drives in ſome great fiſh, obliges them to continue there but a ſhort time. They uſually reach the coaſt at the approach of evening, ſtay there during the night, and retire to the mountains in the morning.'

Some authors are of opinion that the Condor is not confined to America only; and conjecture that the great bird called the roc, deſcribed by Arabian writers, and ſo much exaggerated by fable, is but a ſpecies of the Condor. The great bird of Tarnaſſar, in the Eaſt Indies, which is ſaid to be larger than the eagle, as well as the vulture of Senegal, which carries off children, are probably the ſame with the bird juſt deſcribed. The inhabitants of Ruſſia, Lapland, and even Switzerland and Germany, are ſaid to have known this animal. A bird of this kind was ſhot in France, which was ſaid to meaſure eighteen feet acroſs the wings; however, as one of the quills was deſcribed as being only ſomewhat larger than that of the ſwan, the extent of the wings muſt certainly have been exaggerated, ſince a bird of ſuch enormous magnitude would undoubtedly have been furniſhed with quills of a much ſuperior ſize. Be this as it may, we have no reaſon to regret that the Condor is ſcarcely ever ſeen in Europe, as it appears to be one of the moſt formidable enemies of the human race. Acroſs the deſarts of Pachomac, which it chiefly frequents, travellers very rarely venture: thoſe gloomy regions are of themſelves ſufficient to inſpire a degree of ſecret horror, exhibiting to view only broken precipices, prowling panthers, foreſts only vocal with the hiſſing of ſerpents, and ſtupendous mountains rendered ſtill more terrible by the Condor, the only bird that adventures to take up it's reſidence in thoſe unfrequented climes.

CONEPATE, or CONEPATL. An American animal, of which Buffon makes two ſpecies, viz. the Conepate, and the zorille; but as they are both ſaid to reſemble the pole-cat in ſhape, and to be cloathed with long fur of a black and white colour, the diſtinction ſeems unmarked in nature. The Conepate has five white ſtripes on a black ground, running longitudinally from the head to the tail. The zorille is rather more diſtinctly coloured, it's black and white colours being more bright; and it's tail black at it's inſertion, and white at it's extremity. But whatever variations there may be either in the figure or colour of theſe little animals, they all agree in one common affection, that of being intolerably fœtid and loathſome. All animals of the weaſel kind are furniſhed with glands near the anus, from which exſudes an odorous matter; in ſome ſpecies yielding a grateful perfume, as in the genet and civet; but, in others, a moſt noiſome and offenſive ſtench, as in the pole-cat and the animal now under conſideration. In the Conepate theſe glands are very large, and furniſh a matter ſublimed to an amazing degree of putreſcence. It is well known that a ſingle grain of muſk will diffuſe it's ſcent over a whole houſe, which will continue for ſeveral months without much diminution; but the perfume of civet is inſignificant when compared with the ſtrength, duration, and inſupportable odour, of this animal. It is uſually voided with it's ordure; and, if a ſingle drop happens to touch any part of a perſon's dreſs, it is almoſt impoſſible to wear it any longer.

This animal, we are informed, ejects it's excrements in order to ſave itſelf from it's purſuers; but it is highly probable that this ejection is only the convulſive effect of terror, and that it ſerves to defend it without any voluntary act of it's own. Certain it is, that it never emits this horrid ſmell except when enraged or affrighted; for it is often kept tame about the habitations of the American planters, without any ſenſation of offence. In a ſtate of nature, it frequently ſteals into farm-yards, and deſtroys the poultry for the ſake of their brains; but it is not prudent either to offend or purſue it on ſuch occaſions, as it then calls forth all it's ſcents, and no human being can poſſibly approach it. If, however, dogs venture to purſue this animal, it endeavours to eſcape by climbing up a tree; but, if driven to extremity, it diſcharges it's intolerable excrements againſt the hunters, though at a conſiderable diſtance; and, ſhould a ſingle particle of this ordure force itſelf into the eye, the injured perſon would run the greateſt riſk of loſing his ſight for ever. Even the dogs themſelves loſe much of their ardour when they find this extraordinary battery played off againſt them; they inſtantly turn from the purſuit, and leave the animal the undiſputed maſter of the field; nor can any commands induce them to rally. 'In 1749,' ſays Kalm, 'one of theſe animals came into the farm where I lived. It was in winter time, during the night; and the dogs which were on the watch, purſued it for ſome time, till it diſcharged it's excrements againſt them. Though I was in bed a conſiderable way off, I thought I ſhould have been ſuffocated; and the cows and oxen, by their lowings, teſtified how

much they were affected by the ſtench. About the end of the ſame year, another of theſe animals crept into the cellar; but did not exhale the ſmalleſt ſcent, becauſe it was not diſturbed. A fooliſh woman, however, who perceived it at night by the ſhining of it's eyes, killed it, and at that moment it's ſtench began to ſpread. The whole cellar was filled with it to ſuch a degree, that the woman kept her bed for ſome days after; and all the bread, meat, and proviſions, were ſo infected, that they were obliged to be thrown out of doors.'

Notwithſtanding it's intolerable ſtench, the natives ſometimes eat the fleſh of this creature, which they aſſert to be tolerable food; but they previouſly take care to cut off thoſe glands from whence the fœtid matter proceeds.

CONGER. The name of the ſea-eel, a ſpecies of the muræna, found on different parts of the Britiſh coaſts; and, according to Dr. Borlaſe, ſometimes weighing an hundred pounds.

The Conger differs from the common eel in the ſuperior darkneſs of it's colour; in it's eyes being much larger in proportion; in having the irides of a bright ſilvery colour; the lower jaw ſhorter than the upper; the ſide-line broad, whitiſh, and marked with a row of ſmall ſpots; the edges of the dorſal and anal fins black; in having more bones than the common eel; and laſtly, in the vaſt ſuperiority of it's ſize, ſome of them having been caught near Scarborough which meaſured ten feet and a half in length, and were eighteen inches in circumference towards the middle.

The Conger, though a ſea-fiſh, is ſuppoſed to generate like the freſh-water ſpecies: innumerable quantities of what is ſuppoſed to be their fry come up the Severn about the month of April, preceding the ſhad-fiſh, which probably viſit that river for the purpoſe of feeding on them. During their ſeaſon, they are ſo very numerous, as to be uſually taken in ſieves made of hair-cloth, and fixed to long poles. The fiſherman, ſtanding on the brink of the river, throws in his net as far as poſſible, and, drawing it out again almoſt inſtantaneouſly, encloſes multitudes of theſe fiſh at every effort. They are called elvers, and are reckoned very delicate food.

The Congers are extremely voracious, preying on other fiſh without exception; and, like all the eel kind, they are extremely fond of carcaſes, being frequently found lodged in ſuch as are accidentally taken out of the water. In Cornwall, theſe fiſh form a conſiderable article of commerce; great quantities of them being taken on that coaſt, and exported to Spain and Portugal. They are ſometimes caught with hooks and lines; but, as that method is very tedious, fiſhers generally uſe what they call bulters, being ſtrong lines, perhaps five hundred feet long, having ſixty hooks, each eight feet aſunder, baited with pilchards or mackrel, and ſunk to the bottom of the ſea by means of weights affixed to them. Fiſhermen are ſometimes under great apprehenſions from large Congers, which are apt to entwine themſelves round their limbs; and they therefore diſpatch them as quickly as poſſible by ſtriking them on their bellies.

When theſe fiſh are about to be cured, they are ſlit, and ſuſpended on drying-frames, as they contain a conſiderable quantity of fat which muſt always be exfuded before they are fit for uſe. It is ſaid that a Conger of a hundred pounds weight will waſte in drying to twenty-four pounds; for which reaſon the ſmalleſt are generally preferred, as being ſooneſt cured.

The ingenious Pennant thinks, that a fiſhery of Congers would be very beneficial to the inhabitants of the Hebrides; though they might probably undertake it at the firſt with a degree of repugnancy, on account of their abſurd averſion to the eel kind.

CONOPS. A genus of the diptera order of inſects, with an extended jointed roſtrum, including thirteen ſpecies.

CONUS. The Linnæan appellation for ſhells of the voluta kind. See VOLUTE.

COOK. A ſpecies of fiſh ſometimes caught in great abundance on the Corniſh coaſts. It is extremely full of ſcales, and does not grow to any conſiderable ſize. The back is purple and dark blue; the belly is yellow; and the tail is rounded.

COOT. A diſtinct genus of birds of the order of grallæ; the diſtinguiſhing characters of which are, that the beak is convex; the thighs are half naked; the feet are furniſhed with four toes; the noſtrils are oblong; and the forehead is entirely naked.

Of theſe birds Linnæus enumerates ſeven ſpecies.

COOT, COMMON. This bird weighs about twenty-four ounces; it's length, from the tip of the bill to the end of the tail, is ſixteen inches, but to the end of the claws twenty-two inches; and the expanſion of the wings is two feet and a half. The bill is ſharp at the point, and of a white colour, with a ſmall tincture of blue. The feet are blueiſh, or duſky green; and about the joints of the toes there are ſemicircular membranes, two on the inner toe, three on the middle, and four on the outer; or, in other words, the three four toes have lateral membranes on each ſide, ſcalloped; the interior with two, the middle with three, and the exterior with four ſcallops. From the bill, almoſt to the crown of the head, there is an excreſcence, or fleſhy lobe, deſtitute of feathers, ſoft, ſmooth, and round; on which account this bird is by ſome called the bald Coot. The head and body are entirely black; the breaſt and belly are of a lead-colour; and the ſhape reſembles that of a moor-hen.

This bird is generally ſeen hovering over large ſtreams and ruſhy marginated lakes; where it makes it's neſt of ſuch weeds as are ſupplied by the water, laying them among the reeds, floating on the ſurface, and riſing and falling with the water. This neſt is ſupported by the reeds among which it is built, ſo that it is ſeldom waſhed into the middle of the ſtream; but, when this accident happens, the bird ſtill maintains her ſtation like a mariner in a boat, and, by the aſſiſtance of her legs, ſteers her treaſure into the neareſt place of ſecurity. She generally lays five or ſix large eggs, of a dirty whitiſh hue, ſprinkled over with minute deep ruſh-colour ſpots. Her young, when juſt hatched, are very deformed, and their heads are covered with a coarſe red down. In winter theſe birds frequently reſort to the ſea; and near Southampton in particular the water ſometimes appears as if entirely covered with them, ſo that they are often expoſed to ſale in that market.

COOT, LARGER. This bird entirely reſembles the former, except in it's ſuperior ſize and the exquiſite blackneſs of it's plumage. It is found in Scotland; and alſo in ſome Engliſh counties, particularly in Lancaſhire.

COOT OF HUDSON'S BAY. The extremity of the upper mandible of this bird is a little crooked; the neck is partly of a fleſhy colour; the head is cinereous; the body is brown above, and white below; there is a white ſpot on each wing; and the legs are brown.

COPROPHAGOS. The appellation given by many authors to the common yelloviſh-coloured fly found on human excrements. There are various ſpecies ſeen on the ordure of different animals; and they are thence called merdivoræ.

COQUALLIN. A beautiful animal of the ſquirrel kind, very remarkable for the variety of it's colours. It's belly is of a bright yellow; it's head and body are variegated with white, black, brown, and orange; and it is deſtitute of any tuft at the extremity of it's ears. This animal, however, ſeems incapable of aſcending trees like the reſt of it's claſs.

COR MARINUM. The name of a claſs of echini marini; the characters of which are, that the anus is placed on the ſide of that point of the ſhell which appears as if cut off; and that the mouth, which has two lips, is placed in the third region of the axis of the baſe.

COR VENERIS. An appellation given by conchologiſts to a very elegant ſpecies of the cordiformis, or heart-ſhell, which approaches nearer in ſhape to a real heart than the bucardium, or any other ſhell of this genus. There are only three known ſpecies of the Cor Veneris; namely, the denticulated one, with very elegant roſe-coloured ſpots; the white boat-ſhell, furrowed internally; and the little roſe-coloured kind; but they are all extremely elegant and valuable ſhells.

CORACINUS. A fiſh caught in the Mediterranean ſea, called by ſome naturaliſts ſkiæna; and by Aldrovandus and Salvian, umbra. It's colour reſembles that of the common tench, but it is ſhaped ſomewhat like the perch. It's ſcales are ſmall; it's mouth is of a moderate ſize, but well furniſhed with teeth; and it's tail, when extended, is of a roundiſh figure. The extremities of the rays or nerves of the tail-fin are black; and the other fins are alſo of that colour.

CORACIUS. A Linnæan term for the pica, or pye. In that great naturaliſt's ſyſtem, this bird makes a diſtinct genus; the diſtinguiſhing character of which is, that the inner tail-feathers grow gradually longer and longer.

This bird likewiſe obtains the name of pyrrhocorax; and, in Engliſh, is called the Corniſh chough. It is ſhaped like the jack-daw, but rather reſembles the common crow in it's ſize; and the beak is long, red, and ſomewhat incurvated at the point. It frequents rocks and ruined buildings about the ſea-ſhores; and is found about the high cliffs all along the weſtern ſhores of England. It's voice is very ſimilar to that of the jack-daw, but hoarſer and rougher.

CORAX PISCIS, or CROW-FISH. An animal of the cuculus kind, very much reſembling the ſwallow-fiſh in it's ſhape. The bones which cover the gills of this fiſh all terminate in ſharp ſpines. See FLYING-FISH.

CORBEIL. The name of a curious ſpecies of the chama. It is of the larger kind; and deeply ſtriated, both longitudinally and tranſverſely, forming a kind of reticulated ſurface, in imitation of baſket-work.

CORCULUS. An appellation given by ſome authors to a ſmall ſpecies of cordiformis, or heart-ſhell, of a roſe-colour.

CORDYLA, or CORDYLUS. A name by which ſome naturaliſts expreſs the thynnus, or tunny-fiſh, while in it's adoleſcent ſtate.

CORDYLUS. A ſpecies of lizard, called alſo uromaſtyx and caudiverba. It is larger than the green lizard; and the tail is rounded and divided into a number of circles covered with ſcales, which coat them over like the tiling of a houſe.

COREGONUS. A genus of fiſhes of the malacopterygious or ſoft-finned kind; the characters of which are theſe: the branchioſtege membrane on each ſide contains ſeven, eight, nine, or ten bones; the pinna dorſi is placed nearer the ſnout than the ventral fins; and the teeth are ſo minute as to be ſcarcely perceptible in ſeveral of this claſs.

Artedi enumerates four ſpecies of this genus. The term Coregonus is compoſed of Kore, the Pupil of the Eye; and Gonia, an Angle or Corner; and is applied to this genus of fiſhes from the ſingular ſtructure of this part of the eye, the pupil running out into an acute angular corner in the anterior part in all the ſpecies.

CORETT. A large Eaſt Indian fiſh of the tunny kind, ſuppoſed by many to be the ſame with the common tunny. It grows to the length of ſix or ſeven feet; the eyes are large, and their irides yellow; the tail is broad and forked, and of a yelloviſh-green colour; the belly-fins are yelloviſh; and the belly itſelf is a fine bright gloſſy blue, with a ſilvery caſt. This fiſh, which is generally caught with hooks, is eſteemed very delicious.

CORMORANT. A large ſea-bird of the order of anſeres, called by authors corvus aquaticus, or the ſea-raven. This bird is about three feet four inches in length; the extent of it's wings is four feet two; and it's weight exceeds ſeven pounds. The bill is duſky, and five inches in length; the baſe of the lower mandible is overſpread with a naked yelloviſh covering, which extends under the ſkin, and forms a kind of pouch; and a looſe ſkin of the ſame colour reaches from the upper mandible round the eyes and angles of the mouth. The head and chin are a dull black; but under the chin of the male the feathers are white, and the head in that ſex is adorned with a ſhort, looſe, pendent creſt. The coverts of the wings, the ſcapulars, and the back, are of a deep green, edged with black, and gloſſed with blue; the quill-feathers and the tail are duſky; the breaſt and belly are black; and in the midſt of the laſt there is frequently a bed of white. The legs are ſtrong, ſhort, and black, the middle claw being ſerrated on the inſide; and the irides are of a light aſh-colour.

Notwithſtanding the apparent heavineſs of the ſtructure of Cormorants, few birds are more powerfully predaceous. As ſoon as winter approaches, they are ſeen diſperſed along the ſea-ſhores, entering the mouths of freſh-water rivers, and threatening deſtruction to all the finny tribe. They are uncommonly voracious; and their digeſtion is ſo aſtoniſhingly rapid, that their appetites ſeem to be always craving, yet never to be ſatisfied. This gnawing ſenſation, however, may probably be ſtimulated by the great quantities of ſmall worms lodged in their inteſtines, and which their unceaſing gluttony contributes to engender.

Thus formed with the groſſeſt appetites, this bird, even in it's moſt healthful ſtate, ſends forth a moſt rank and offenſive ſmell, by far more fœtid than putrid fleſh. It's form is diſagreeable, it's voice is hoarſe and croaking, and all it's qualities are obſcene. It cannot then ſurely appear ſtrange,

that

that Milton ſhould make Satan perſonate this bird, when he ſends him on the moſt infernal of all purpoſes, namely, to ſurvey with pain the beauties of Paradiſe, and to ſit deviſing death on the tree of life. It has been obſerved by ſome critics of this ſublime poet, that perching a water-fowl on a tree implied no great acquaintance with the hiſtory of nature; however, it muſt be remarked, in vindication of Milton, that Ariſtotle expreſsly aſſerts of the Cormorant, that it is the only aquatic fowl which at any time either ſits or rooſts on trees.

This bird ſeems to be of a multiform nature; and, wherever fiſh are to be found, it watches their migrations. It is ſeen as well on land as at ſea; it feeds on freſh-water as well as ſea-fiſh; it generally builds it's neſt in the cliffs of rocks; and preys not only by day, but alſo during the night.

The indefatigable induſtry and great dexterity of the Cormorant in catching fiſh, was probably the only motive which induced ſome nations to keep this bird in a tame ſtate; and Willughby aſſures us, that it was once bred by the Engliſh for that very purpoſe. The deſcription of their manner of fiſhing is thus delivered by Faber. 'When they carry them out of the rooms where they are kept, to the fiſh-pools, they hoodwink them, that they may not be frightened by the way. When they are come to the rivers, they take off their hoods; and having tied leather thongs round the lower part of their necks, that they may not ſwallow the fiſh they catch, they throw them into the river. They preſently dive under water, and there for a long time purſue the fiſh with wonderful ſwiftneſs; and when they have caught them, riſe to the ſurface of the water, and preſſing the fiſhes lightly with their bills, ſwallow them, till each bird hath devoured five or ſix fiſhes after this manner. Then their keepers call them to the fiſt, to which they readily fly; and, one after another, vomit up all their fiſh, only a little bruiſed with the firſt nip given in catching them. When they have done fiſhing, ſetting the birds on ſome high place, they looſe the ſtrings from their necks, leaving the paſſage to the ſtomach free and open; and for their reward they throw them a part of the prey, to each one or two fiſhes, which they will catch moſt dextrouſly as they are falling in the air.'

At preſent, the Cormorant is trained up in every part of China, for the purpoſes of piſcation, where lakes and canals are very numerous. 'To this end,' ſays La Compte, 'they are educated as men rear up ſpaniels or hawks; and one man can eaſily manage a hundred. The fiſher carries them out into the lake, perched on the gunnel of his boat, where they continue tranquil, expecting his orders with patient attention. When arrived at the proper place, at the firſt ſignal given, each flies a different way to fulfil the taſk aſſigned it. It is very pleaſant, on this occaſion, to behold with what ſagacity they portion out the lake or the canal where they are ſtationed on duty. They hunt about, they plunge, they riſe a hundred times to the ſurface, till they have at laſt found their prey; they then ſeize it in the middle with their beaks, and carry it regularly to their maſter. When the fiſh is too large, they then give each other mutual aſſiſtance; one ſeizes it by the head, the other by the tail, and in this manner they carry it conjointly to the boat. There the boat-man ſtretches out one of his long oars, on which they perch; and, being freed from their burden, they again fly off to purſue their ſport. When they are wearied, the proprietor ſuffers them to enjoy a ſhort interval of reſt; but they are never fed till their taſk is accompliſhed. In this manner they ſupply a very plentiful table; but ſtill their natural gluttony cannot be reclaimed by education. They have always, while they fiſh, a ſtring faſtened round their throats, to prevent them from devouring their prey; as otherwiſe they would at once ſatiate themſelves, and diſcontinue their purſuit.'

The Cormorant is the moſt expert fiſher of all birds, and is generally on the wing; and the aſtoniſhing celerity with which it deſcends from immenſe heights in the air in order to dive for it's prey, affords matter of agreeable amuſement to a perſon ſtationed on an adjacent cliff.

This large bird is ſeldom ſeen in the air, except at thoſe times when it perceives fiſh almoſt immediately under it; and even then they muſt be pretty near the ſurface of the water before it will venture to dart on them: if the fiſh are at a depth beyond what the impetus of the Cormorant's flight renders it capable of diving to, they certainly eſcape; for this animal is by no means capable of moving ſo faſt under water as a fiſh can ſwim. It ſeldom, however, makes an unſucceſsful attack; and it is often ſeen riſing heavily with a fiſh larger than it can conveniently devour.

The Kamtſchadales adopt a ſingular method of catching Cormorants. They faſten a thick iron or wooden hook to a long rope or ſtrap; bait the hook with a whole fiſh, the point of the hook coming out near the back fin; and then throw it into the ſea. This lure the Cormorants obſerving, gather about it in flocks, quarrel for it, and the ſtrongeſt ſwallows it: the bird, thus entangled, is drawn on ſhore by the natives; who conſtruct needle-caſes and combs of the bones of it's wings.

CORNET. A name given by ſome French writers to a genus of ſhells, called by others cuculli, and by the generality of naturaliſts volutæ.

CORNUTA. An appellation given by Geſner, and ſome others, to the fiſh called alſo lyra, and lyra altera. It is of the trigla kind, and is diſtinguiſhed by Artedi under the name of the trigla with many cirri and an octagonal body.

CORNUTUS PISCIS. A name given by Ray to an Eaſt Indian fiſh, called hoorn viſch by the Dutch. It has a horn of a very ſingular conſtruction on the back part of it's head, or the beginning of it's back; and two others on it's belly, which are very crooked and brittle, and ſeem to partake of the nature of ſpines, which in ſome fiſh are placed before their neck and belly-fins. A wound inflicted by one of theſe fiſh is reckoned dangerous; and is generally cured with much difficulty, eſpecially if any part of the horn is broke off, which, from it's natural brittleneſs, is uſually the caſe.

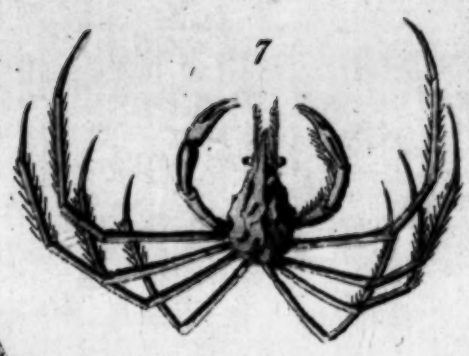
COROCORO. A Brazilian fiſh ſomewhat reſembling the coracinus of the Mediterranean. It has a ſinus in the back, in which it can bury it's fins at pleaſure.

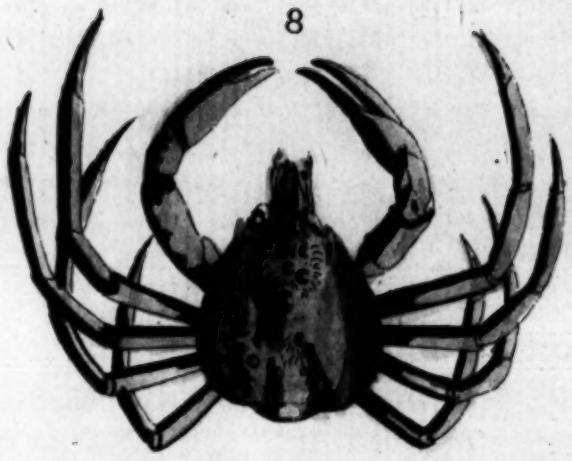
CORONA ÆTHIOPICA. The name of a ſea-ſhell of the dolium or concha globoſa kind.

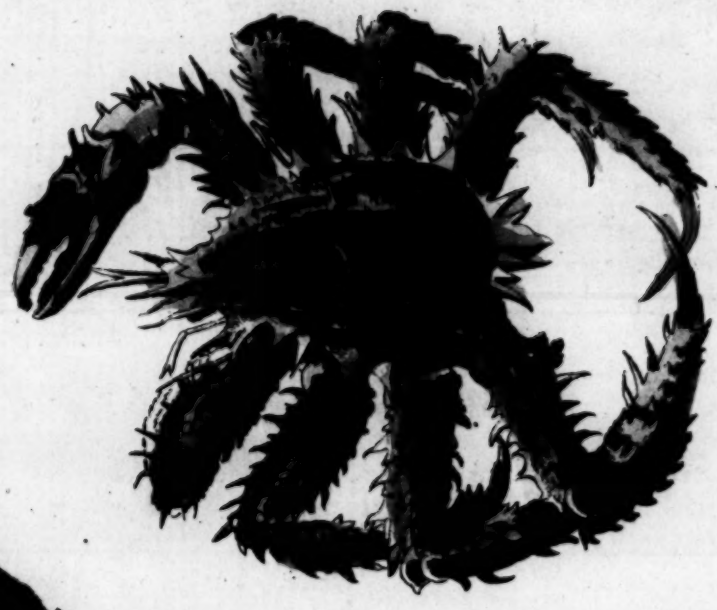
CORONA IMPERIALIS. A kind of voluta, which differs from other ſhells of that family in having it's head adorned with a number of points, which form a ſort of crown.

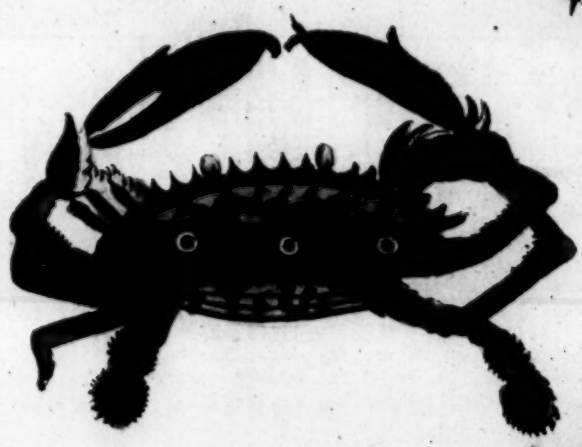
There are four ſpecies of this ſhell in the cabinets of conchologiſts.

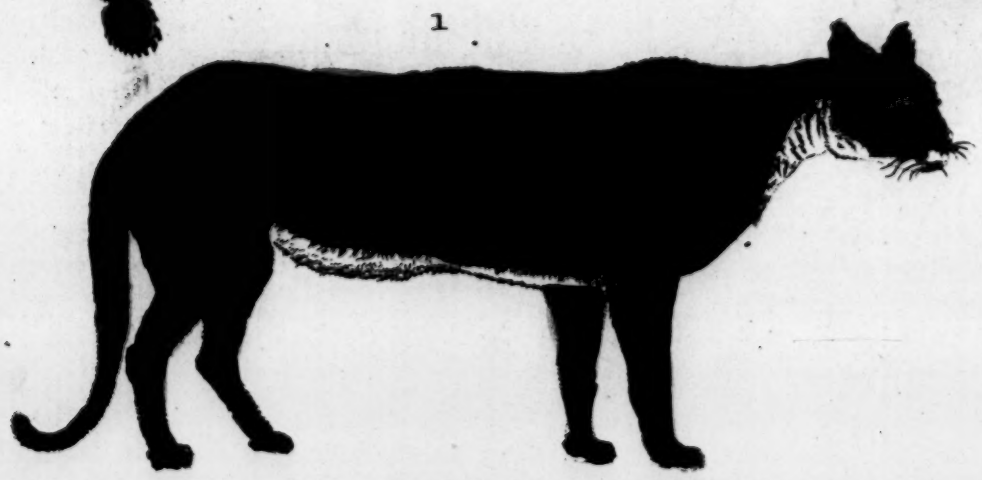
CORVO. An appellation ſometimes given to the umbra or chromis of authors; a large fiſh commonly caught in the Mediterranean ſeas, and which, while young, is brought to the markets of Italy.











1. COUGAR. 2. COOT. 3. HORRID CRAB. 4. INDIAN LAND CRAB. 5. INDIAN SEA CRAB. 6. LONG CLAWED CRAB. 7 SLENDER LEGGED CRAB. 8. SPIDER CRAB. 9. CRAKE.

Plate XXXVIII. Published as the Act directs by Harrison & Co. July 9 1785.

CORVUS. A diſtinct genus of birds of the order of picæ, in the Linnæan ſyſtem; the diſtinguiſhing characters of which are, that the bill is ſharp and convex; that the noſtrils are covered with recumbent briſtles; that the tongue is cartilaginous and bifid; and that the feet are formed for walking. Of this genus, which includes nineteen ſpecies, are the crow, the raven, the jack-daw, &c.

Corvus is likewiſe a name given by Paulus Jovius to the faber or doree.

CORVUS AQUATICUS, the Pelicanus Carbo of Linnæus. A name given by authors to the cormorant, or corvorant, on account of it's voracious appetite, which originates from a great number of ſmall worms lodged in it's ſtomach and inteſtines, and cauſing a very ſudden digeſtion. See CORMORANT.

Corvus Aquaticus is alſo a name given to the acacolotl, a very beautiful Mexican bird, of a lucid greeniſh, blackiſh, and purpliſh hue. It feeds on fiſh, from which circumſtance it's fleſh contracts a very rank and unpleaſant taſte.

CORVUS AQUATICUS MINOR. A name by which Ray has very properly denominated a bird common on our northern coaſts, and there called the ſhagge. It ſeems to be a genuine ſpecies of the cormorant.

CORVUS CORNUTUS. An appellation given by ſome authors to the Indian raven with a corneous beak, more commonly called the rhinoceros-bird.

CORVUS FLUVIATILIS. A very remarkable bird peculiar to the Philippine Iſlands, reſembling the common raven by being of the amphibious kind; and called by the natives caſſili, or colocolo.

CORVUS INDICUS. A bird of the raven kind, very common in the Molucca iſlands. It is of a conſiderable magnitude, and armed with a large beak and very ſtrong claws. It is not carnivorous, but is very deſtructive to the fruit of the nutmeg-tree. It's fleſh, which is very delicate, partakes greatly of the aromatic flavour of it's food.

CORVUS SYLVATICUS. A bird deſcribed by Geſner, and ſuppoſed by Willughby to be the ſame with the coracias, or pyrrochorax; but, when minutely examined, it differs eſſentially from that bird in ſize, as well as in having a creſt on it's head. Geſner ſays that the Corvus Sylvaticus is of the ſize of the common hen. It appears at a diſtance of a deep black; but, when viewed nearer, and in the ſunſhine, of a fine gloſſy green. It's tail is ſhort; and it's toes are very long. It feeds on frogs, fiſh, and other ſmall animals; and builds it's neſt in the ruins of old buildings, where it lays two or three eggs. It flies very high; and, when young, is accounted delicate food.

CORVUS PISCIS. A river-fiſh of the chub kind, common in Italy and ſome parts of Germany; called by Geſner capito fluviatilis rapax; and, by the common people, noppe. It ſeldom exceeds ſix or ſeven pounds in weight; but is extremely rapacious, and purſues it's prey with ſuch eagerneſs, that it frequently ſtrands both itſelf and them. It is caught at all ſeaſons of the year, but never in any great plenty; and it's fleſh is eſteemed very palatable.

CORYPHÆNA. A genus of fiſh of the malacopterygious kind, and of the thoracic order in the Linnæan ſyſtem; the diſtinguiſhing characters of which are theſe: the branchioſtege membrane contains five bones on each ſide, excluſive of two others which lie under the bony coverings of the gills, and are therefore not viſible: the fins are ſeven in number, and one on the back reaches from the top of the head to the tail; the head terminates in a very obtuſe form, or, as it were, perpendicularly declivious from the vertex to the mouth; and the head and body are both ſomewhat compreſſed.

Linnæus enumerates twelve ſpecies of this genus, and Artedi three.

COTATUA. A Philippine name for a ſpecies of parrot, called alſo calangay. The body is entirely white; and on the head there is a creſt of feathers. It is of the ſize of a common pigeon.

COTATUA MAJOR. A very beautiful ſpecies of parrot common in the Philippine iſlands. It is about the ſize of a common hen; and of a moſt delicate white colour, except the beak and legs, which are black. This bird is with great facility taught to imitate the human voice, and articulates more diſtinctly than any other of the parrot claſs.

COTTUS. A genus of the acanthopterygious fiſhes; the characters of which are theſe: the branchioſtege membrane on each ſide contains ſix very diſtinct bones; the head is broader than the body, depreſſed, and prickly; there are two dorſal fins, the foremoſt containing ſeveral flexile prickles; the ventral fins are ſmall; and the ſkin of the whole fiſh is ſmooth, and free from ſcales. There are three ſpecies of this genus; one of which is the ſmall fiſh known by the name of the miller's thumb.

COU DOU, or CU-DU. A ſpecies of deer met with at the Cape of Good Hope. It is diſtinguiſhed by the length of it's body, which is diſproportionable to it's height; the delicate ſlightneſs of it's limbs; the uncommon ſtatelineſs and beauty of it's horns, which are ſmooth, hollow, and beautifully tranſparent like tortoiſe-ſhell; the ſtripes of white on it's ſkin; a black corneous ſubſtance on it's upper jaw, which ſupplies the place of teeth; a ſtripe of white hair paſſing from the middle of the horns to the tail; and a tuft of hair reaching from the neck to the breaſt.

There are alſo animals of this kind both in Aſia and America, though they differ from each other in a few particulars.

COUGAR. This animal is ſometimes called the red tiger, but is extremely different from the tiger of the eaſt. It is a native of the continent of America, from Canada to Brazil; and in South America it is called puma, and is by far the moſt formidable and miſchievous of all the animals of the new world. In the warmer regions, the Cougar is fierce and ravenous to a very high degree, but in North America it's ferocity is greatly ſubdued by the rigours of the climate. In South America, where the towns generally border on the foreſts, theſe creatures make frequent incurſions by night into the very houſes, from whence they carry off fowls, dogs, and other domeſtic animals. The Cougar, however, is both weak and contemptible when compared with the oriental tiger, as being hardly able to contend with any of the human ſpecies ſingly. The negroes and Indians are very dextrous in encountering it; and ſome of them, even for the ſake of it's ſkin, explore it's retreats. The weapons uſed in this ſeemingly dangerous buſineſs conſiſt only of a lance two or three yards long, made of a ponderous kind of wood, and having it's point hardened in the fire; and a kind of ſcymitar about three quarters of a yard in length.

Thus armed, the Indian waits till the Cougar makes an aſſault on his left-hand, which wields the lance, and is wrapped up in a ſhort baize cloak. Sometimes the animal, aware of it's danger, ſeems to decline the combat; in which caſe it's antagoniſt endeavours to provoke it by a ſlight touch of the lance, in order, while he is defending himſelf, to ſtrike a ſure blow. As ſoon, however, as the creature feels the lance, it graſps it with one of it's paws, and with the other ſtrikes at the aſſailant's arm. It is then that the negro nimbly aims a blow with his ſcymitar, hitherto concealed in his other hand, and hamſtrings the animal, which inſtantly draws back, but being enraged, as ſuddenly returns to the charge. However, on receiving another ſtroke, it is totally deprived of the power of motion; and the Indian, after diſpatching it without moleſtation, ſtrips off it's ſkin, and cuts off it's head, with which he returns to his companions as trophies of his proweſs.

But though man in general prevails over this ferocious creature, it often ſucceſsfully attacks the crocodile; and, indeed, is the only Tranſatlantic animal which is not afraid of the conteſt. When the tiger, impelled by thirſt, which it ſeems inceſſantly to feel, approaches a river for the purpoſe of drinking, the crocodile, which indiſcriminately preys on every creature, lifts it's head above water, in order to ſeize it; but the Cougar, not leſs rapacious than itſelf, and unacquainted with the power of the enemy, boldly ventures to ſeize it, and plunges it's claws into it's eyes, the only vulnerable part. On this the crocodile inſtantly dives under water; and, as the tiger will ſooner die than relinquiſh it's hold, it of courſe deſcends with it's antagoniſt. There the combat continues for ſome time; namely, till the Cougar either eſcapes from it's diſabled adverſary, as is ſometimes the caſe, or is drowned.

In Guiana, Cougars are extremely numerous; and, when the French firſt ſettled at Cayenne, theſe animals proved a dreadful ſcourge to the infant colony; but by degrees they were repulſed and deſtroyed, and are now no longer found in the vicinity of that place. In Brazil, Paraguay, and the country of the Amazons, they are frequently ſeen climbing up trees, either in queſt of prey, or to avoid their purſuers. Like all other animals of the cat kind, they are terrified at the ſight of fire; and ſeldom venture near it, as they ſuſpect their enemies to be always in it's vicinity, and their nocturnal eyes are dazzled by it's brightneſs.

The fur of the Cougar is ſoft, and much eſteemed by the Indians, who wrap themſelves in it during the winter months. The back, neck, rump, and ſides, of this animal, are of a browniſh red, mixed with duſky hairs; the belly and claws are whitiſh; and the teeth are of a vaſt ſize. It purrs like a cat; and it's tail is above two feet and a half long.

From the nature and deſcription of this animal, it might naturally enough be ſuppoſed that it's fleſh is improper for food; nevertheleſs, there are ſeveral accounts which alledge the contrary, and aſſert, that it is even ſuperior to mutton. However, what Des Marchais obſerves ſeems to be moſt conſonant to truth; namely, that the ſkin is the moſt valuable part of the animal, and that the fleſh is generally lean and rank.

COULTER-NEB, or COUNTER-NEB. An appellation given in ſome parts of England to the anas arctica Cluſii. See DUCK.

COW. A well-known animal; the diſtinguiſhing characteriſtics of which are, that there are eight cutting teeth in the lower jaw, and none in the upper; that the ſkin along the lower ſide of the neck is pendulous; and that the horns bend out laterally.

Of all ruminating animals, or thoſe which chew the cud, the Cow kind deſerves the firſt rank both for beauty and utility. The horſe is more properly an animal which falls to the lot of the rich; ſheep are chiefly gregarious, and require attendance; but the Cow is more particularly the poor man's bleſſing, and equally conſtitutes his riches and ſupport. Many of the peaſantry have no other poſſeſſion than a cow; and even of thoſe advantages which are derived from this uſeful creature, the poor are but the nominal poſſeſſors. It's fleſh they muſt not preſume to taſte, ſince their whole fortune would then at once be loſt; it's young they are obliged to fatten for ſale, as a luxury to which they can have no pretenſions; and it's very milk is converted into butter and cheeſe for the tables of their maſters; while the only ſhare they derive from their poſſeſſion, is the refuſe of the milk, and the choice of their market.

In thoſe countries, however, where ſome regard is paid to the natural rights of mankind, this excellent animal is of more general advantage. In Poland, Germany, and Switzerland, every peaſant keeps two or three Cows, not for the benefit of his maſter, but the ſupport of his family. The meaneſt hind in thoſe countries can kill one Cow for his own table, which he ſalts and hangs up, and thus preſerves a delicacy through the revolving year. There is ſcarcely a cottage in thoſe countries which is not adorned with this mark of hoſpitality; a piece of beef ſuſpended there is conſidered as elegant furniture, and argues the poſſeſſor's opulence and eaſe. But in Britain, where we triumph in imaginary liberty, yet ſubmit to every evil of monopoly and extortion, the poor peaſantry ſeldom have it in their power to purchaſe meat; and even butter is conſidered as an article of extravagance.

However, the climate, as well as the paſture, of Great Britain, is excellently adapted to the moderate nature of the Cow; and the verdure and fertility of our plains are perfectly ſuited to it's manner of feeding; for, being deſtitute of the ſuperior fore-teeth, it loves to graze in high and rich paſtures. It does not ſeem to be very anxious as to the quality of it's food, provided it has always an abundant ſupply; and makes no particular diſcrimination in the choice of it's herbage, but eats without ceremony whatever comes in it's way. For this reaſon, in our Engliſh paſtures, where the graſs is rather high and flouriſhing, than ſucculent and nutritious, the Cow thrives admirably; and there is no part of Europe in which this animal grows larger, yields more milk, and fattens ſooner.

In a courſe of years, the horſe and the ſheep are known to impoveriſh the ſoil; but, in that where the Cow has been bred, the paſture acquires a finer ſurface, and every year becomes more beautiful and level: for the horſe being furniſhed with fore-teeth in his upper jaw, nips the graſs cloſely, and ſelects that which is the moſt delicate and tender; the ſheep alſo, though with reſpect to it's teeth formed like the Cow, only bites the moſt ſucculent parts of the herbage. Theſe animals therefore cut the finer graſs too cloſely, and ſuffer the high weeds and ranker graſs to vegetate and over-run the paſtures; but the Cow being obliged to feed on the

the talleſt vegetables, eats them all down, and thus levels the ſurface of the graſs.

The age of the Cow is known by it's teeth and horns. It is furniſhed with eight cutting teeth in the lower jaw; the two middlemoſt of which drop out at the age of ten months, and are replaced by others which are broader, but not ſo white: at the age of ſixteen months the two next milk-white teeth diſappear, and others ſucceed them; and thus, at the end of every ſix months, the animal loſes and gains, till, at the age of three years, all the cutting teeth are renewed, and then they are long, regular, and pretty white. But as the creature advances in years, the teeth grow black and irregular; their inequalities become ſmoother, and conſequently the animal chews it's food with more difficulty. Thus the Cow often declines from this ſingle cauſe; for as it requires a great deal to ſupport life, and as the ſmoothneſs of it's teeth renders the difficulty of chewing very great, a ſufficient quantity of food cannot be ſupplied to the ſtomach; in which caſe the poor animal droops in the midſt of plenty, is gradually more and more emaciated, and at length expires.

The horns are likewiſe another, as well as a more unerring method, of determining the age of the Cow. At three years of age it ſheds it's horns, and new ones ſpring up in their places, which are afterwards undeciduous; at four, it has ſmall pointed, ſmooth horns; and, at five, they become larger, and are marked round with the former year's growth. Thus, while the animal continues to live, it's horns alſo continue to lengthen, and every year a new ring is added to their baſes; ſo that, by allowing three years before their appearance, and then reckoning the number of annulations, the creature's age may be exactly known.

The Engliſh breed of Cows has been ſo greatly improved by a foreign mixture, that we cannot with any degree of certainty point out the original kind in theſe iſlands. Thoſe which may be ſuppoſed to have been purely Britiſh, are much ſmaller than thoſe on the northern parts of the continent of Europe. In the Highlands of Scotland, the cattle are extremely ſmall; and many of them, males as well as females, are deſtitute of horns. The Welch runts are conſiderably larger; and the Corniſh black cattle are about the ſize of the latter. The large ſpecies now propagated in moſt parts of England, are either entirely foreign, or our own breed improved by a croſs with the foreign kind. The Lincolnſhire Cows derive their ſize from the Holſtein breed; and the large hornleſs cattle which are bred in ſome counties of England, were imported originally from Poland. England was once famous for a wild breed of theſe animals, but which no longer exiſt; and this nation may juſtly boaſt of having fewer wild animals than any kingdom of Europe. Cultivation and agriculture are ſure to baniſh them wherever they are found; and every addition which a country receives from art diminiſhes the number of thoſe animals which are only adapted to a ſtate of nature.

The Cow ſeems more liable to changes from it's paſture and climate, than any other quadruped. In the different parts of this narrow iſland, we can eaſily trace the great varieties produced among theſe animals by the richneſs or poverty of the ſoil. In ſome, they grow to an aſtoniſhing bulk; and, in others, they are proportionably diminutive. The breed of the Iſle of Man, as well as of moſt parts of Scotland, is in general conſiderably leſs than that of either England or Ireland: they are alſo differently formed, the dewlap being much ſmaller, and having more of the neck of the ewe. A few years ſince, this circumſtance was conſidered as a deformity in cattle; and the Cow was choſen, according to Virgil's direction, with a large dewlap; however, it ſeems to be at preſent the univerſally received opinion, that the Cow wants in udder what it has in neck; and the larger the dewlap, the ſmaller the quantity of it's milk. Graziers therefore endeavour to blend the two breeds, the large Holſtein with the ſmall Northern; and from this union is produced that fine milch breed which excels the cattle of every other quarter of the globe.

In ſhort, in almoſt every part of the world, the Cow is found either large or ſmall, in proportion to the richneſs or poverty of it's food. Thus Africa is remarkable for the largeſt and ſmalleſt cattle of this kind; as is alſo India, Poland, Switzerland, and ſeveral other parts of Europe. Among the Eluth Tartars, where the paſtures are remarkably rich and nouriſhing, the Cow grows to ſuch an amazing ſize, that a tall man can hardly reach the tip of it's ſhoulder: in France, on the contrary, where this animal is ſtinted in it's food, and driven from the moſt flouriſhing paſtures, it greatly degenerates, and is neither valuable for it's milk or it's fleſh. The variations, however, in the ſize of this animal, are leſs remarkable than thoſe of it's form, it's hair, and it's horns: in many, indeed, theſe variations are ſo extraordinary, that they have been conſidered as different kinds of creatures, and names have accordingly been applied to them as a diſtinct ſpecies; when, as Buffon aſſerts, they are in fact the ſame. In this manner the urus and the biſon have been conſidered, from the variety in their make, to be diſtinct in their production; but they are all in fact the deſcendants of one common ſtock, poſſeſſing that certain mark of unity, namely, their breeding and propagating together. Naturaliſts therefore have laboured under an obvious error, when on account of the extreme bulk of the urus, or the hump on the back of the biſon, they have aſſigned them different parts in the creation, and ſeparated a claſs of animals which were really united. Though the horſe and the aſs do not differ more in figure than the Cow and the biſon, the former are diſtinct animals, their breed being marked with ſterility; while the latter are of the ſame kind, their breed is fruitful, and a race of creatures is produced in which the hump belonging to the biſon in a ſhort time entirely diſappears. It is evident therefore, that the differences between the Cow, the urus and the biſon, are merely accidental. Nature, which has given horns to ſome Cows, and denied them to others, may alſo, in her caprice, have beſtowed a hump on the biſon, or enlarged the ſize of the urus.

The Cow is found, in ſome one or other of it's varieties, in almoſt every part of the world; and, in ſhort, the variations which are every where ſo perceptible, as has been previouſly obſerved, ariſe either from climate or food, the cultivation of man, or the caprice of nature. The wild Cow and the tame; the animal peculiar to Europe; and that of Aſia, Africa, and America; the bonaſus and the urus; the biſon and the zebu; are all one and the ſame: they generate among each other; and, in the courſe of a few generations, the original diſcriminations become extinct. Of all animals, therefore, man alone excepted, the Cow ſeems to be moſt

moſt extenſively propagated; it's nature appears equally capable of the extremes of heat and cold; it inhabits the frozen fields of Iceland, as well as the burning deſarts of Lybia; it ſeems to be an ancient denizen of every climate; and is found domeſtic and tame in ſuch countries as have been civilized, but ſavage and wild in thoſe regions which are leſs populous and refined. In a ſtate of nature, it is capable of defending itſelf againſt the moſt powerful enemy of the foreſt; and is ſubordinate to man alone, whoſe power it has experienced, and of whoſe aid it ſeems eventually to ſtand in need. In a domeſtic ſtate, it is mild and tractable; and, though incapable of ſhewing any great degree of attachment to it's feeders, is nevertheleſs ſenſible of their careſſes, and grateful for their kindneſs. However wild calves which are taken from their dams may appear in a ſavage ſtate, either in Africa or Aſia, they ſoon become patient, humble, and familiar; and, while other animals preſerve their natural propenſities with inflexible perſeverance, theſe in all reſpects accord with the deſires and conveniences of mankind.

Cows uſually receive the males from the beginning of April till the end of July, and go nine months with young: but the ſeaſon of copulation may be altered by human induſtry; for, by a particular method of management, veal is procured at every ſeaſon of the year.

In this country, the ox is the only horned animal which applies it's ſtrength to the ſervice of mankind: and it is certain that, in many caſes, oxen are preferable in the draught to horſes; their food and harneſs are cheaper; their frame is leſs delicate and obnoxious to diſeaſe or injury; and, when age puts an end to their labour, their fleſh is ſtill equally valuable, an old working ox being as good food, and fattening as well, as a young one.

Every part of this animal may be applied to ſome beneficial purpoſe; and each has it's particular uſes in commerce, manufactures, and medicine. Boots, ſhoes, and many other conveniencies of life, are produced from it's hide. Vellum is made of calves-ſkins; and gold-beater's ſkin is formed either of a thin vellum, or the finer parts of the guts of the ox. The hair, mixed with lime, is a very neceſſary article in building. Of the horns, combs, handles of knives, boxes, buttons, drinking-veſſels, and many other uſeful articles, are made. In medicine, the horns are alſo uſed as alexipharmics or antidotes againſt poiſon, the plague, or the ſmall pox; and they are ſaid to poſſeſs the ſame virtues as the oriental bezoar. Carpenters glue is made of the chips of the hoofs and the parings of the raw hides. The bones are uſed by mechanics as a ſubſtitute for ivory, by which means they are enabled to ſell many neat conveniencies at a cheap rate. From the feet is procured an oil which anſwers many uſeful purpoſes; and the bones, when calcined, afford a fit ſubſtance for teſts, for the uſe of the refiner in the ſmelting-trade. The blood is ſaid to be an excellent manure for fruit-trees, and forms the baſis of that colour to which we give the name of Pruſſian blue. Our artificial light is in a great meaſure derived from the fat and ſuet of this animal; the gall, liver, ſpleen, and urine, have their reſpective uſes in the materia medica; and the importance of butter, cheeſe, and milk, are too obvious to need inſiſting on.

The fleſh of the ox is extremely nutritious, and yields a very ſtrong aliment; and thoſe who live chiefly on this food are in general ſtrong, vigorous, and healthy: but it ſhould be tender and well fed, otherwiſe it proves hard of digeſtion; however, it is probably at all times better adapted to the laborious and the active, than the ſedentary and the indolent. Bull-beef contains a great deal of volatile ſalt and oil; but being generally hard, tough, and dry, it is therefore ſeldom uſed. It is ſaid, indeed, that when a bull is firſt baited, and then killed, the fleſh becomes more proper food; but this practice is in itſelf ſo inhuman and barbarous, that it were devoutly to be wiſhed that it was either totally exploded, or at leaſt, from a voluntary refinement of manners, univerſally relinquiſhed.

The fleſh of the Cow is inferior to that of the ox; but if ſhe has been well fed, and is young, the difference is not very eaſily perceived. Veal is nouriſhing, well taſted, and eaſy of digeſtion; for which reaſon it is very proper for delicate conſtitutions, and thoſe who have not opportunities for regular exerciſe. The fatteners of veal for the London markets ſuffer the calves to lick ſalts, chalk, and ſuch other ſubſtances, in order to communicate a ſuperior whiteneſs to their fleſh: but what it thereby gains in colour, it certainly loſes in flavour; and, though more tempting to the eye, it is unqueſtionably leſs grateful to the palate, as well as leſs wholeſome and nutritive.

The following varieties of the Cow kind, properly ſo called, are the moſt remarkable.

Cow, Wild. This animal proves to be the urus, the bonaſus, and the biſon, of the ancients. It is met with, in ſmall numbers, in the marſhy foreſts of Poland, in the Carpathian Mountains, in Lithuania, and near Mount Caucaſus in Aſia. Some authors have mentioned a ſpecies of wild Cow found on the continent of Africa; but ancient and ignorant travellers are little to be relied on, it having long ſince been diſcovered that the wild ox of Leo is the ſame with the gnou, an animal of a very different claſs. Indeed, the torrid zone forbids a ſcrutiny into ſeveral ſpecies, which would, perhaps, afford much ſatisfaction to an inquiſitive naturaliſt.

Cow, Great Indian. This variety is of a reddiſh colour; has ſhort horns bending cloſe to the neck; and a vaſt lump on the ſhoulders, which is extremely fat, and eſteemed very delicate and rich food: this lump, being merely accidental, diſappears, in the courſe of a few deſcents, in a mingled breed. The Great Indian Cow is alſo common in Madagaſcar, where it grows to an enormous ſize.

Cow, Small Indian. This animal, which is very ſmall, has a lump on the ſhoulders, and horns which project a little forwards. It is the bos Indicus of Linnæus, and the zebu of Buffon. In Surat there is a very minute breed, not larger than a dog, which nevertheleſs has a very fierce look.

Cow, Abyssinian. In this country, and in the iſle of Madagaſcar, a curious variety of the Cow is met with, which has a hump on the back, with horns only attached to the ſkin, and entirely pendulous.

Cow, Lant. This animal, as deſcribed by Leo Africanus, has ſmaller legs and neater horns than the common breed; the hair is white; the hoofs are of a jetty blackneſs; and of the hide targets are made which are impenetrable by a muſquet-ball. This ſpecies is ſo amazingly ſwift, as even to outrun the Barbary horſe, that courſer

which

which can overtake it being uſually valued at a thouſand ducats, or a hundred camels.

Cow, American. This variety has a vaſt bunch on the ſhoulders; and ſhort black rounded horns, with large intervals between their baſes. The fore-parts of the body are thick and ſtrong, but the hinder ones are ſlender and weak; and the head and hunch are covered with hair of a dull ruſt-colour, which is at times ſo very long, as to give the animal a ſhapeleſs appearance, and obſtruct it's ſight. During winter the whole body is cloathed in the ſame manner; but in ſummer the hind-part of the body is naked, wrinkled, and duſky. The tail is about a foot long, and naked, except a tuft of black hairs at the extremity. This animal inhabits Mexico, and the interior parts of North America: it is fond of marſhy places, and is extremely fierce and dangerous; but, if taken young, is capable of being tamed. It ſeems to be the ſame with the biſon and other cattle in a wild ſtate, and to be common to Europe and America. See Biſon.

COWRIES. A genus of ſhells of the cyprea claſs. See Cyprea.

COXOLITLI. A Brazilian bird of the ſize of the peacock, and of a browniſh colour. Though it differs from the jacupema in ſome particulars, it ſeems to be of the ſame ſpecies.

COYOLCOZQUE. An American bird, deſcribed by Hernander and Nieremberg as a ſpecies of quail or partridge. The colour of it's back is a mixture of white and yellow; it's breaſt and belly are wholly yellow; it's head and neck are ornamented with ſpots of black and white; it's eyes are black; and it's legs are yellow. It is very common in many parts of Spaniſh America, and is eſteemed excellent food.

COZCACOAUHTLI. The Mexican name of a large bird of the eagle kind deſcribed by Nieremberg; and called by ſome regina aurarum, from the power it poſſeſſes of flying againſt the wind.

CQUILAQUIL. The Philippine name of a kind of parrot common in theſe iſlands; and diſtinguiſhed from the other ſpecies by being very large, and entirely of a green colour.

CRAB. A genus of aptera in the claſs of inſects in the Linnæan ſyſtem, comprehending no leſs than eighty-ſeven ſpecies; the diſtinguiſhing characters of which are, that it has generally eight or ten feet, two of them being clawed; the two eyes are remote, and for the moſt part pedunculate, elongated, and moveable; the two feelers are cheliferous; and the tail is articulated. To this genus belong the Crabs properly ſo called, cray-fiſh, ſhrimps, lobſters, &c.

The Crab is found equally in freſh and ſalt water, and as well on land as in the ocean. It differs eſſentially from the lobſter in it's conformation, but entirely reſembles it in it's habits. The body is in general roundiſh; the back is a little arched; and the tail turns up under it, lying in a cavity deſigned for that purpoſe. Theſe fiſh are of different ſizes, ſome weighing ſeveral pounds, and others only a few ounces. The male is diſtinguiſhed from the female in having a broader tail, like that of the lobſter; and it likewiſe reſembles that fiſh with reſpect to the number of it's claws, which are two; and it's legs, which are eight.

As Crabs, however, are found on land as well as in the water, the peculiarities of their ſituation produce the following difference in their habitudes.

Land-Crabs are found in moſt of the warmer regions of Europe, and in great abundance in all the tropical climates in Africa and America. They are of various kinds, and endued with different properties: ſome are ſalubrious, delicious, and nouriſhing food; others are poiſonous and malignant to a very high degree; ſome are not above half an inch broad, others are a foot in diameter; ſome are of a dirty brown colour, and others are mottled in a very beautiful manner.

The coaſts of the Britiſh iſles afford a conſiderable number of ſpecies, the more remarkable of which will be deſcribed: but the moſt extraordinary animals of the kind are the Violet-Crab of the Caribbees, and the Soldier-Crab.

Crab, Violet, of the Caribbees. This animal reſembles two hands cut in the middle, and united together, for each ſide bears ſome reſemblance to four fingers; and the two nippers or claws repreſent the thumbs. All the reſt of the body is covered with a ſhell as large as a man's hand, and bunched in the middle; on the fore-part of which there are two oblong eyes, each of the ſize of a grain of barley, as tranſparent as cryſtal, and as hard as horn. A little below theſe, the mouth is placed, covered with a ſort of barbs, under which are two broad ſharp teeth, as white as ſnow, placed not much unlike the blades of a pair of ſciſſars: with theſe teeth it can eaſily maſticate leaves, fruits, and rotten wood, which conſtitute it's uſual food. However, the principal inſtruments for cutting, as well as ſeizing it's food, are it's nippers, which catch ſuch ſure hold, that the creature ſooner loſes it's limbs than it's graſp; and is often ſeen retreating after having left one of it's claws fixed in it's enemy, which claw will frequently retain it's hold upwards of a minute after the Crab has made it's eſcape. In fact, this animal loſes little by leaving either a leg or an arm, for they ſoon grow again, and then the creature is ſeen as perfect as before. This, however, is the leaſt ſingular part of the hiſtory of theſe animals; and the following circumſtances, were they not well authenticated, might not only ſtagger the belief of an ordinary reader, but bring the veracity of naturaliſts in queſtion.

They not only live in a kind of orderly ſocieties in their mountainous retreats, but annually deſcend to the ſea-ſide, in a regular army compoſed of millions. As they multiply in vaſt numbers, they generally begin their expedition about the month of April or May; and then ſally forth in myriads from the ſtumps of hollow trees, the clifts of rocks, and holes dug by themſelves beneath the ſurface of the earth. At ſuch times the whole ground to a conſiderable diſtance is ſo covered with theſe adventurers, that it is almoſt impoſſible to advance a ſingle ſtep without treading on ſome of them. The ſea being the place of their rendezvous, to it they direct their march with the utmoſt preciſion; they neither turn to the right nor left, whatever obſtacles intervene; and, if they even meet with a houſe, they attempt to ſcale the walls, rather than ſuffer their ranks to be thus broken.

But, though the above be the general order of their route, on other occaſions they are obliged to conform to the face of the country; and, if it be interſected by rivers, they then wind along the courſe of the ſtream. The proceſſion ſets forward from the mountains with all the regularity of an army under the guidance of an experienced general. They are commonly divided into three battalions; of which the foremoſt conſiſts of the ſtrongeſt and

boldeſt males, which march forward like pioneers, in order to clear the route, and oppoſe threatening dangers: theſe are often obliged to halt for want of rain, and to take ſhelter in the moſt convenient ſpots, till an alteration of the weather takes place. The main body of the army is compoſed of females, who never leave the mountains till the rain has ſet in for ſome time; and then they deſcend in regular battalia, formed into columns of fifty paces broad, and three miles deep, and ſo cloſe, that very little of the ground can be diſcovered. Three or four days afterwards, the rear-guard follows; a ſtraggling, undiſciplined tribe, conſiſting of a mixture of males and females, neither ſo robuſt nor numerous as the two former columns. The night ſeaſon is chiefly choſen for their march; but, ſhould it happen to rain in the day-time, they do not fail to avail themſelves of that circumſtance, moving forward with a ſlow, uniform pace. When the ſun ſhines, ſo as to warm the ſurface of the ground, they make a general halt, and patiently wait the cool of the evening. When frightened, they march backward in a diſorderly manner, holding up their nippers, with which they frequently lacerate the fleſh of their adverſaries, and ſometimes leave theſe weapons, as we have already obſerved, in the wounds inflicted by them. They even try to intimidate their enemies, by clattering their nippers together, as if to threaten thoſe who preſume to diſturb them. But though they thus make a ſhew of being formidable to man, they are far from living in amity with each other; for no ſooner is one of their number maimed by accident, or worn out with fatigue, than the reſt fall on it, devour it on the ſpot, and then purſue their journey.

After having encountered a thouſand dangers, and continued their march ſometimes for two or three months, they at length arrive at their deſtined port, where they prepare to caſt their ſpawn. The fœtus, if it may be ſo called, is yet within their bodies, and not placed under their tails, as is uſual in animals of this kind; for theſe creatures wait till they can have the benefit of ſea-water to aſſiſt their delivery. For this purpoſe, they no ſooner reach the ſhore, than they eagerly advance to the water's edge, and ſuffer the waves to waſh their bodies two or three times. This, however, ſeems only preparatory to their bringing their ſpawn to maturity; for they preſently withdraw to the land, in order to ſearch for a lodging-place; and, in the mean time, their ſpawn grows larger, is excluded out of their bodies, and ſticks to the barbs under their tails; and theſe protuberances ſoon become as large as hens eggs, and exactly reſemble the roes of herrings. In this advanced ſtate of pregnancy, they once more ſeek the ſhore, and ſhake off their ſpawn into the water. At this time whole ſhoals of hungry fiſh are impatiently waiting for this annual ſupply; the ſea appears diſcoloured with them for a conſiderable ſpace; and above two-thirds of the Crabs eggs are immediately devoured by theſe rapacious invaders. Thoſe eggs, however, which eſcape them, are hatched under the ſand; and in a very ſhort time millions of theſe little animals are ſeen to quit the ſhore, and to advance in ſlow proceſſion to the mountains.

The old ones having thus diſcharged the grand duty of irrational nature, ſet out on their return; but they are now become ſo very feeble and emaciated, that they can hardly creep along, and even their fleſh aſſumes a different colour. The generality of them, therefore, are obliged to continue in the flat parts of the country till their ſtrength is recruited, making holes for themſelves in the earth, which they cover with leaves and dirt, in order to prevent the admiſſion of air. In theſe retreats they throw off their old ſhells, which they leave in a manner entire, the places where they opened on their bellies being unſeen. At that time they are quite naked, and almoſt without motion, for ſix days together; after which they become ſo fat, as to be very delicious food; and have under their ſtomachs four large white ſtones, which gradually decreaſe as their ſhells harden; and, when arrived at perfection, are no longer perceptible. The animals then make their way backward with a ſlow pace, and generally perform their journey in the ſpace of ſix weeks.

When the Crab is reinſtated in it's mountainous retreat, it is almoſt impoſſible to diſlodge it; for, ſubſiſting only on vegetables, it ſeldom ventures abroad; and it's habitation being in general inacceſſible, it remains there during a great part of the ſeaſon in perfect ſecurity; and at thoſe times only, when impelled by the deſire of bringing forth it's young it is forced to deſcend into the flat country, does it fall under the power of man. At ſuch ſeaſons the natives wait for the deſcent of theſe creatures with eager expectation, and deſtroy numbers of them; but, diſregarding their bodies, they only ſearch for that ſmall quantity of ſpawn which lies on each ſide of their ſtomachs within their ſhells.

Theſe animals, indeed, are more valuable on their return, after having ſhed their exuviæ; for, being covered with ſkins reſembling ſoft parchment, almoſt all their parts, except their ſtomachs, are edible. They are taken in their holes by means of inſtruments adapted to that purpoſe; and are alſo traced by night, when on their journies, with flambeaux. The inſtant they are attacked, they throw themſelves on their backs, and with their claws pinch their enemies moſt unmercifully. But dextrous Crab-catchers ſeize them by their hinder legs, in ſuch a manner that their nippers cannot hurt them, and thus throw them into their bags.

The natives derive conſiderable advantage from theſe creatures; and ſlaves are often entirely ſubſiſted on them. In Jamaica, where they are found in abundance, they are regarded as a very great delicacy. Still, however, the eating of them is attended with ſome danger; for, even of this kind, many prove poiſonous, which quality they are ſuppoſed to derive from feeding on the machineel apple; and, whenever they are found under that noxious plant, they are always rejected.

Crab, Soldier. This creature, when diveſted of it's ſhell, ſomewhat reſembles the lobſter. It is uſually about four inches long; and has no ſhell behind, but is covered down to the very tail with a rough ſkin terminating in a point: it is, however, armed with ſtrong hard nippers before, the only cruſtaceous parts which it contains. But, what nature has denied this animal, it has taken care to ſupply by art; and, taking poſſeſſion of the deſerted ſhell of ſome other animal, reſides in it till it's increaſed ſize requires a larger covering.

This ſpecies is found in the Weſt India iſlands; and, like the Violet-Crab, annually deſcends from the mountains to the ſea-ſhore, in order to depoſit it's ſpawn, and provide itſelf with a new ſhell. This ſeems to be a very active period in the life of this animal; and probably it's firſt care is to provide for

for it's offspring before it attends to it's own wants; and, from the number of ſmall ſhells it is at times ſeen to examine, it is ſuppoſed that it depoſits it's ſpawn in them, where it remains in ſecurity till the time of excluſion. But, however this may be, the Soldier is by no means unmindful of itſelf, for, having outgrown it's old ſhell, a part of it's naked body is perceptible; and therefore a ſhell muſt be found big enough to cover the whole, and yet not ſo very large as to be unmanageable and unwieldy. Theſe purpoſes are by no means effected by a ſlight ſurvey; for the little animal is ſeen buſily perambulating the ſhore, along that line of pebbles and ſhells which is formed by the fartheſt wave; ſtill, however, dragging it's old incommodious habitation at it's tail, and ſeemingly unwilling to relinquiſh it till it has diſcovered one more preferable. It accordingly ſtops at one ſhell, turns it, and paſſes by; goes on to another, which it ſurveys, and then diſengages it's tail from it's old habitation, in order to make trial of the new; but ſhould this alſo prove incommodious, it then quickly returns to it's old ſhell again: and in this manner it continues changing, till at laſt it ſuits itſelf with one light, roomy, and commodious, to which it adheres, though it may ſometimes be ſo very large as to conceal every part of it's body.

Theſe animals, however, do not accompliſh their reſpective ends without much difficulty, and ſometimes a ſevere combat; for, when two of them happen to fix on a ſhell at the ſame time which ſeems ſuitable to each of them, they both endeavour to take poſſeſſion of it; ſtriking with their claws, and pinching each other, till the weakeſt is obliged to yield up the object of diſpute. On this the victor immediately enters, and parades in his new acquiſition backwards and forwards on the ſtrand, in the view of his diſcomfited antagoniſt.

The Soldier Crab, when laid hold of, ſends forth a feeble cry, and endeavours to ſeize it's invader with it's nippers; which being effected, it will ſooner die than quit it's graſp. The wound thereby inflicted is very painful and difficult of cure; for which reaſon, and as it's fleſh is not much eſteemed, it is generally permitted to return to it's old retreat in the mountains without moleſtation.

Crab, White. This is likewiſe a land Crab, and a native of the Caribbees. It has nearly the ſame properties as the violet Crab, but grows to ſuch a ſuperior ſize, that one of them is reckoned worth three of the violet.

Crab, Indian Land. The body of this animal is of a roundiſh figure, a little compreſſed, and about the ſize of an orange. It has eight legs, each five inches long, with four joints, the lower parts being covered with long hairs; the mouth is large, and hairy on it's ſides, as well as the reſt of the body. Of the great legs or claws, the right is large, and the left conſiderably leſs; the right being eight inches long and two broad, while the left is ſcarcely ſo long by one-third. The eyes are either extremely prominent, or ſunk, according to the pleaſure of the animal; and near the mouth there are two ſhort feelers, which the creature poſſeſſes the faculty of extending or concealing.

All Crabs of this ſort have the following property; namely, that if they ſeize any thing with their nippers, they ſooner quit their limbs than their hold: however, as obſerved in the deſcription of the Violet-Crab, this loſs is ſoon repaired by a reſtoration of the part.

Crab, Sea, East Indian. This ſpecies is about a ſpan long, and of a very ſingular colour, the ſhell being in general ſpeckled with yellow ſpots, except where three purple ones appear incloſed in a circle of white. The claws next the body are yellowiſh, white in the middle, and of a deep purple at the extremities; and the eyes project almoſt an inch from the head.

Crab, South American. The natives call this ſpecies Guaia Apara. It is beautifully variegated, one end of the body being terminated with a circle, and the other with a right line; and it grows to about three inches in breadth, and two and a half in length. The fore-part of the ſhell is of a dark brown colour, variegated with whitiſh ſpots; and the hinder part is of a whitiſh yellow, adorned with brown ſtreaks running in a longitudinal direction. It has eight roundiſh feet or claws, with four joints, of a whitiſh yellow colour; and alſo two great claws or nippers, each two inches and a half long, and half an inch broad; their upper parts being armed and dentated like the comb of a cock. When ſwimming, it cauſes a kind of bubbling in the water, which reſembles the effervescence occaſioned by fire.

Crab, Pea. The thorax of this animal is ſmooth, rounded, and undivided; and the tail is as large as the body, which is commonly about the ſize of a pea. It inhabits the muſſel; and is undeſervedly characterized as being poiſonous, for the inflation, after feeding on muſſels, is wholly conſtitutional; and for one that receives any injury from eating them, multitudes remain unaffected.

Crab, Long-Horned. This ſpecies has a ſmooth round body, large claws, and very long horns. It is a very minute animal, being leſs than the Pea-Crab; and is commonly found on the Britiſh coaſts.

Crab, Common. This claſs has three indentions on the front, five ſerrated teeth on each ſide, ovated claws, and ſubulated hind-feet. It is of a dirty green colour; and, when boiled, turns red. It lurks under ſea-weeds, or burrows in the ſand, and is found on all the Britiſh ſhores.

Crab, Purifier. The thorax of this animal has a quintuple dentation on each ſide; the front is alſo indented; the body is ſubcordated; the claws are angulated; and the two laſt joints of the hind-legs are ovated and ciliated. This ſpecies generally inhabits the depths of the ſea, where it feeds on dead animals; and is thence called the Purifier, as occaſioning the removal of putrid ſubſtances.

Crab, Black-Clawed. The body of this ſpecies is ſmooth; the thorax is crenated; the hind-feet are ſubulated; and the claws are ſmooth, with black tips. It frequents rocky coaſts; is reckoned very delicious food; and the tips of the claws are uſed in medicine, as an abſorbent of acidities in the ſtomach and bowels.

Crab, Velvet. The thorax of this claſs is quinquedentated; the body is overſpread with a ſhort brown velvet-like down; the claws are covered with minute tubercles; and the hind-legs are broadly ovated. It is found on the coaſts of the iſle of Angleſea.

Crab, Bristly. This ſpecies has a hairy thorax, and on each ſide a ſlight quintuple dentation; the claws are ovated, ſomewhat echinated, and hairy; and the feet are briſtly and ſubulated. It is a ſmall animal of a reddiſh colour, and lurks under ſtones on the ſea-ſhore.

Crab, Large-Clawed. The front of this creature

creature is tridentated; the thorax is undivided; the claws are very large, depreſſed, and conſiderably ciliated on the outſide; three of the legs are ſubulated on each ſide; the antennæ are very long, and reverted when not in uſe; and the body is about the ſize of a horſe-bean. It is found on the coaſts of the Hebrides.

Crab, Long-Clawed. This ſpecies has a bifurcated front, a ſpine at the corner of each eye, and another on each ſide of the thorax towards the tail; the body is ovated and ſmooth; the antennæ are as long as the body; the claws are double the length of the body; and the feet are ſubulated.

Crab, Horrid. This claſs has a projecting bifurcated ſnout; the body is cordiform; and the claws and legs are covered with long and very ſharp ſpines. This animal, which is pretty large, is found among rocks on the eaſtern coaſts of Scotland; and is alſo common in Norway.

Crab, Spider. The front of this animal is bifid; the thorax is briſtly; the body is cordiform and tuberculated; the claws are long and ovated; and the legs are long, ſlender, and ſubulated.

Crab, Slender-Legged. This ſpecies has a bifid ſnout; the body is ſmall, tuberculated, and ſhaped like a heart; the claws are long; and the legs are of a very diſproportionate ſize, ſlender, and hairy.

CRAB-LICE. A very odious and troubleſome ſpecies of vermin, which ſtick ſo faſt in the human ſkin, that they are with difficulty diſlodged. When viewed with a glaſs, they bear a ſtrong reſemblance to the ſmall crab-fiſh; whence they have obtained their popular name. They are diſtinguiſhed by ſome authors under the different appellations of Pluctulæ, Morpiones, Petolæ, and Peſſolatæ; and chiefly infeſt the arm-pits and privities of thoſe who indulge in promiſcuous amours.

Theſe vermin are by ſome ſuppoſed to prognoſticate a ſpeedy diſſolution to thoſe whom they relinquiſh without the help of medicine. When touched with a rag wetted in the milk of ſublimate, they are at once deſtroyed.

CRAKE. A bird of the gallinule or rail kind; and ſuppoſed by many to be the ſame with the water-rail, an error originating from a want of due attention to their different characters and natures. The bill of this bird is ſhort, ſtrong, thick, and exactly formed like that of the water-hen; though it never frequents watery places, but is always found among corn, graſs, broom, or furze. The feathers on the crown of the head, the hind-part of the neck, and the back, are black edged with bay; the coverts of the wings are of the ſame colour, but without any ſpots; the tail is ſhort, and of a deep bay; the belly is white; and the legs are cinereous.

This bird, which is migratory, quits this kingdom before the approach of winter, but has a ſtrong averſion to the trouble of flying. The legs, which are remarkably long for the ſize of the bird, hang down while it is on the wing; and, in general, it ſeems rather inclined to truſt to ſwiftneſs of foot than rapidity of flight. It lays from twelve to twenty eggs, of a dull white colour, marked with a few yellow ſpots; but, notwithſtanding this very great number, the breed is by no means plentiful in England. It's note, which is very ſingular, reſembles the word Crex, often repeated.

In Scotland and Ireland, Crakes are very numerous: they arrive there about the middle or end of April, when they are very lean; but, before they leave theſe iſlands, they become plump and fat, and generally weigh upwards of eight ounces.

CRAMP-FISH. The Engliſh name of the torpedo, or electric ray; a fiſh poſſeſſing the ſingular power of benumbing the fingers of thoſe who touch it, even through the medium of a rod.

CRAMPER. An appellation given by ſome authors to the brama ſexatilis, or pagrus Indicus; a large and broad ſea-fiſh caught among the rocks on the ſhores of many parts of the Eaſt Indies.

CRANE. This bird, in the Linnæan ſyſtem of zoology, forms a ſpecies of the ardea, or heron; the characteriſtic of which is, that the head is criſtated, and almoſt bare of feathers.

Birds of the Crane kind, (which, in an extenſive ſenſe, comprehends a very numerous claſs) being habituated to marſhy places, may be known either by the length of their legs, or their ſcaly coverings: they are in general very thinly feathered half way up their thighs, and all of them above their knees. In moſt birds of this claſs the bill is very remarkable; it is generally longer than that of any other bird; and at the point is poſſeſſed of extreme ſenſibility, being furniſhed with nerves for the better feeling of it's food under ſlime in marſhy places where it cannot poſſibly be diſcerned. Some of theſe birds are furniſhed with every convenience; having long legs for wading, long necks for ſtooping, and long bills for ſearching. They lead a life of precarious liberty, in fens and marſhes, and on the margins of ſeas or lakes: they ſubſiſt on fiſh and inſects; build their neſts in a very ſimple manner; and are exceeded in cunning and fecundity by almoſt every other claſs of animals.

Crane, Common. Various and contradictory are the accounts reſpecting the ſize and dimenſions of this bird. According to Willughby and Pennant, the Crane is from five to ſix feet long from the tip of the bill to the tail; while other naturaliſts aſſert that it is above five feet high; and ſome others, that it is even equal in height to a man. Briſſon ſeems to give this bird it's real dimenſions, when he deſcribes it as ſomething leſs than the brown ſtork, which is about three feet high, and four from the tip of the bill to the tail. Still, however, the numerous teſtimonies of it's ſuperior ſize are not to be totally rejected; and perhaps that bird from which Briſſon took his dimenſions was one of the ſmalleſt kind. According to this author, the Crane is exactly three feet four inches from the tip to the tail, and four feet from the head to the toe. It is ſlender in proportion to it's height, and has a long neck and long legs. The top of the head is covered with black briſtles; and the back part of it, which is bald and red, is a ſufficient diſtinction between this and the ſtork, to which it is very nearly allied in ſize and conformation. The plumage is aſh-coloured; and two large tufts of feathers ſpring from the pinion of each wing bearing ſome reſemblance to hair, and finely curled at the extremities, which the Crane can erect or depreſs at pleaſure. Geſner informs us that, in his time, theſe feathers were often ſet in gold, and worn in the caps of perſons of diſtinction by way of ornament.

Such is the deſcription of a bird concerning which ſo many fables have been invented and propagated. The Crane is a bird with which all the ancient writers were familiar; and, in depicting it, they have not failed to blend imagination with hiſtory. From the policy of theſe birds, they tell us, we are to conceive an idea of the moſt perfect republic among mankind; from their tenderneſs to their aged parents, whom they take care to nouriſh,

riſh, cheriſh, and ſupport when flying, we are to learn leſſons of filial piety; but particularly, from their conduct in fighting with the pigmies of Ethiopia, we are to receive our maxims in the art of war.

In early times, the hiſtory of nature fell to the lot of poets only, and certainly none could deſcribe it better: but it is a part of their province to embelliſh their deſcriptions with adſcititious ornaments; and, when this captivating ſcience was cultivated by a more cool and ſober claſs of authors, they were obliged to take the accounts of things as they found them; and, in the preſent inſtance, fable was handed down to poſterity blended with a certain portion of truth.

There is unqueſtionably ſome degree of reality in theſe relations; but they have been greatly exaggerated by fancy. Cranes are certainly very ſocial birds, being ſeldom ſeen alone: they uſually fly or ſit in flocks of fifty or ſixty together; and, while ſome of them feed, others watch as centinels on duty. The fable of their ſupporting their aged parents may probably have originated from their ſtrict connubial affection; and as to their fighting with pigmies, it may not be improbable that they have at times boldly withſtood ſuch monkies as attempted to rob their neſts; for, in theſe caſes, as Cranes live on vegetables, it is not likely that they ſhould be the firſt aggreſſors.

The Crane is a vagrant, ſocial bird, and is known in every country of Europe except our own. 'There is no part of the world,' ſays Bellonius, 'where the fields are cultivated, that the Cranes do not come in with the huſbandman for a ſhare of the harveſt. As birds of paſſage, they are obſerved to depart and return regularly at thoſe ſeaſons when their proviſion invites or repels them. They generally quit Europe about the latter end of autumn, and return at the beginning of ſummer. In the interior parts of the continent, they are ſeen croſſing the country in flocks of fifty or a hundred, and making from the northern regions towards the ſouthern. In theſe migrations, however, they are not ſo reſolutely bent on expedition, but that, if a field of corn preſents itſelf in their way, they will make a halt to regale on it. On ſuch occaſions they do incredible damage; and as their depredations are generally performed during the night, when the huſbandman riſes in the morning, with ſorrow he perceives his fields laid waſte by an enemy whoſe ſwiftneſs his vengeance cannot overtake.'

Cranes were formerly known in England, and held in great eſtimation for the delicacy of their fleſh; and there was alſo a penalty laid on thoſe who deſtroyed their eggs: but, at preſent, this country is too populous, as well as too well cultivated; and though our fields may offer them abundance, their hazard would certainly be greater than their enjoyment. Nor, indeed, does it appear that we are not greater gainers by their abſence than we ſhould be by their company; for however delicious their fleſh might once have been, when, as Plutarch informs us, Cranes were blinded, and kept in coops, in order to be fattened for the tables of the great in Rome; or, when they were brought up, ſtuffed with mint and rue, to the tables of our nobles at home; they are now juſtly conſidered over the whole continent of Europe as wretched food, their fleſh being fibrous and dry, and only fit for the ſtomachs of the robuſt and the laborious.

The favourite abodes of Cranes are the arctic regions: they deſcend into the more ſouthern parts of Europe rather as viſitants than inhabitants; yet it is not well aſcertained in what manner they portion out their time with reſpect to the different parts of the world. The migrations of the fieldfare and the thruſh are obvious and well known; they proceed northward or ſouthward in one undeviating courſe; and, when their food fails them here, they have but one region to repair to. But Cranes change their places like wanderers. Geſner aſſures us, that theſe birds begin to quit Germany about the middle of September, and finally leave it about the middle of October; from whence they are ſeen flying ſouthward by thouſands: and Rhedi tells us, that they arrive in Tuſcany a very ſhort time after, where they tear up the newly-ſown grain, and do incredible miſchief. During the ſeverity of the winter, it is probable that they approach nearer the line; and, about the middle of February, they again viſit Italy, anticipating the ſpring, and affording the natives a prelude of that delightful ſeaſon.

The heights to which theſe birds aſcend in their migrations is truly aſtoniſhing; and their notes, which are the loudeſt of all other birds, are heard in the clouds at a diſtance wholly imperceptible. As they are lightly framed in proportion to their ſize, and expand their wings to a great extent, they are capable of floating at the greateſt heights, where the air is moſt pure; and thus ſecure their ſafety by being entirely out of the reach of man.

Though Cranes, during their aerial voyages, are altogether imperceptible to human eyes, they have the moſt diſtinct viſion of every object below them: they direct their flight by their cries; and incite each other to deſcend whenever a fit opportunity for depredation preſents itſelf. Their voice, as before obſerved, is the loudeſt of all the feathered tribe; and it's peculiar clangor ariſes from the extraordinary length and contortions of their wind-pipes. In quadrupeds, the wind-pipe is ſhort; and the glottis, or cartilages which form the voice, are ſituated at that end next the mouth: but in water-fowl, the wind-pipe is longer, and the cartilages which form the voice are placed at the other end, which lies down in the belly. Cranes, therefore, have more ſonorous voices, in proportion to their ſize, than any other animals; for their note, when formed below, is reverberated through all the revolutions of the wind-pipe till it reaches the air.

As theſe birds riſe but heavily, they are extremely ſhy, and ſeldom ſuffer mankind to approach them. Their depredations are uſually committed during the darkeſt nights, when they ſometimes viſit a field of corn, and trample it down as if it had been croſſed by an army; and if, on ſuch occaſions, they are invaded on any ſide, the Crane that firſt perceives the danger is ſure to ſound the alarm, and all of them are inſtantaneouſly on the wing. Sometimes they make choice of an extenſive, ſolitary marſh, where they range themſelves for a whole day as if in the act of deliberation; and, after finding it impracticable to procure that ſpecies of food which is moſt congenial to their appetites, they wade the marſhes in ſearch of inſects, and other nouriſhment which can be obtained in ſecurity. Corn, indeed, is their favourite food; but hardly any thing comes amiſs to them. Rhedi, who diſſected ſeveral of theſe birds, found one of their ſtomachs filled with the herb dandelion; that of another with beans; a third with a large quan-

tity of clover; a fourth and fifth with earth-worms and beetles; in ſome more, he found lizards and ſea-fiſh; and, in others, ſnails, graſs, and pebbles. From hence we may conclude, that theſe birds are eaſily ſupplied, and that they are deſtructive to corn-fields only occaſionally.

The Crane is in general a peaceful bird, both in it's own ſociety, and with reſpect to the reſt of the feathered kind. Though ſo very large, and apparently endued with a conſiderable ſhare of ſtrength, a falcon purſues, and often diſables it. Thoſe who are fond of the amuſement of hawking, let fly ſeveral hawks together againſt the Crane, which endeavours to avoid them by flying up perpendicularly, till the air becomes too fine and rare to ſupport it. The hawks, however, ſtill keep pace with it; and, though leſs adapted than the Crane for floating in ſo thin a medium, being poſſeſſed of greater rapidity, they gain the aſcendency. Both parties often riſe out of ſight; but ſhortly after begin to appear again, tumbling perpendicularly together, with great animoſity on the ſide of the hawks, and with loud ſcreamings on that of the Crane. Thus driven to extremity, and unable to fly, the poor Crane throws itſelf down on it's back, and in that ſituation makes a deſperate reſiſtance, till the ſportſman coming up, puts a final period to the conteſt.

In ages leſs refined than the preſent, the barbarous diverſion of breeding up Cranes to be thus baited, was much practiſed, the young ones being taken from the neſt for this ſavage purpoſe. The Crane is certainly an animal very eaſily tamed; and, if we may credit Albertus Magnus, has a particular affection for man. The female, which may be diſtinguiſhed from the male by being covered with feathers in thoſe parts where the other is bald, never lays more than two eggs at a time; which are like thoſe of a gooſe, but of a blueiſh colour. The young are ſoon capable of flying; and then the parents, after ſhewing them where their food is moſt eaſily to be found, forſake them for ever. Though yet unfledged, they run with ſuch amazing ſwiftneſs, as to be with difficulty overtaken by any of the human ſpecies. As they advance in years, their plumage becomes gradually darker and darker; and, as a proof of their longevity, Aldrovandus aſſures us, that a friend of his kept one of them in a tame ſtate for upwards of forty years.

The commonalty of every country, even at this period, pay a compaſſionate kind of regard to the Crane, the ancient prejudices in it's favour perhaps ſtill continuing to operate. In ſome kingdoms, it is conſidered as a heinous offence to kill one of theſe birds; and though the legiſlature decline puniſhing the offence, the vulgar fail not to reſent the injury. It is, in ſome meaſure, conſidered as the prophet of the ſeaſon; and, according to it's approach or delay, they regulate the periods of their rural œconomy: if their favourite bird makes an early appearance, they expect a plentiful ſummer; but, if it is tardy in it's viſit, they then prepare for an unpropitious one.

Crane, Balearic, the crowned African Crane of Edwards. This ſpecies reſembles the common Crane in it's ſize and figure; but the bill is ſhorter, and the plumage of a dark greeniſh grey. The moſt ſtriking parts, however, of this bird's figure, are the head and throat. On the head there is a thick round creſt, compoſed of briſtles ſpreading on every ſide, and reſembling rays diverging different ways; the longeſt of which rays is about three inches and a half; and they are all topped with a kind of black taſſels, which have a very beautiful effect. The ſides of the head are bare, whitiſh, and edged with red; and a kind of wattle hangs beneath the throat, reſembling that of a cock, except that it is undivided. The eyes are large and prominent; the pupils are black, with gold-coloured irides; and on each chap there is the appearance of a white line, terminating in one that is red on the upper part.

This bird, which is a native of the coaſt of Africa and the Cape de Verd iſlands, feeds on graſs and ſeeds. As it runs, it extends it's wings, and moves very ſwiftly; but it's uſual pace is ſlow and majeſtic.

Crane, Hooping. The length of this bird, from the tip of the bill to the end of the claws, is five feet ſeven inches; the bone which extends from the knee to the foot is eleven inches; and the thigh is bare five inches above the knee: the middlemoſt toe is five inches long without the claw; and the bill, which is toothed at the point, is ſix inches long. The noſtrils are placed, in the channels on each ſide, at about a third part of the length from the head; and the chaps are of a yellowiſh brown colour at their extremities, and a little duſky in the middle. The top of the head is covered with a reddiſh ſkin; behind which there is a triangular ſpot, with one of the points backwards. The ſides of the head, the throat, neck, body, and tail, are white; but the nine exterior quills of the wings are black; the tenth is black and white; and the reſt are entirely white. The outer and middle toes are united by a web as far as the firſt joint; and the legs and feet are covered with black ſcales.

The Hooping Crane is generally conſidered as a bird of paſſage: it is, however, obſerved, about the beginning of ſpring, near the mouths of the rivers in Florida.

Crane, Brown and Ash-Coloured. The bill of this bird is four inches long; and the wings, when cloſed, are eighteen inches. The leg-bone, from the knee to the foot, is ſeven inches long; and the middle toe is above three inches. The bill, which is formed like that of the hooping Crane, is of a duſky colour, except the point of the lower chap, which is of a light fleſh. The top of the head, from the bill to the ear-holes, is covered with a reddiſh ſkin, thinly beſet with black hairs; but the ſides of the head beneath the eyes, and the inferior ſide of the throat, are white. The hinder parts of the head and neck all round are cinereous, and gradually become brown at the riſe of the breaſt. The beginning of the back, and the covert-feathers of the wings, are of a light reddiſh brown, with tips of a darker hue. The greater quills are a blackiſh brown, with white ſhafts; and thoſe which fall next the back are brown, their points extending beyond the prime-quills when the wings are cloſed. The tail is of a browniſh aſh-colour; and the breaſt changes from brown to cinereous, which colour reaches to the covert-feathers of the tail, where they are whitiſh. The lower part of the back, the rump, and the upper coverts of the tail, are of a light aſh; and the legs, feet, and claws, are entirely black, the former being bare above the knees. This bird was firſt brought from Hudſon's Bay, to which it reſorts in the ſummer ſeaſon.

Crane, Numidian. This bird is vulgarly called the buffoon-bird; and, by the French, demoiſelle,

1. BALEARIC CRANES. 2. BROWN AND ASH-COLOURED CRANE.

3. COMMON CRANE 4. HOOPING CRANE.

Plate XXXII

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ſelle, or lady, becauſe it is ſuppoſed to imitate the geſtures and dances of the Bohemian ladies; for no ſooner does the Numidian Crane perceive itſelf noticed, than it begins to dance, and to exhibit a variety of geſticulations: but whether theſe antic tricks proceed from vanity or fear, is rather doubtful, though we are inclined to adopt the latter cauſe.

The Numidian Crane is furniſhed with appendices at the head three inches and a half in length, compoſed of white feathers conſiſting of long fibres; but the reſt of the plumage is of a leaden grey colour, except ſome large feathers in the wings which are darker, and a few about the head and neck. Some of theſe birds have plumes of feathers erected like a creſt on the top of the head; and from the corner of each eye a ſtreak of white feathers paſſes under the appendages which form the great feathered ears; and the fore-part of the neck is adorned with black feathers, compoſed of very fine ſoft and long fibres hanging down on the ſtomach, which give the bird a very graceful appearance.

The length of this ſpecies, from the tip of the bill to the end of the claws, meaſures three feet and a half; that of the neck fourteen inches; and, from the thigh-bone to the extremity of the great toe, ten inches. The fore-ſides of the legs are covered with large ſcales; the ſoles of the feet have the appearance of ſhagreen leather; and the claws are black.

CRANE-FLY. An appellation given by ſome authors to the creature vulgarly known by the name of father long-legs, and called by naturaliſts tipula terreſtris.

This inſect preſents the microſcopic obſerver with many curious particulars: but the ſurprizing contraction of the muſcular fibres of it's legs is the moſt remarkable; theſe being diſſected in a drop of water, and placed before the microſcope, the fleſhy fibres contract and diſtend themſelves in a very curious manner, and continue this motion for ſeveral minutes ſucceſſively; a circumſtance, according to the ingenious Leewenhoek, invariably obſerved in this inſect, and in no other. The inteſtines of this animal are likewiſe very wonderfully conſtructed, conſiſting of numerous veſſels and organs, as plainly perceptible by the aſſiſtance of the microſcope, as the bowels of larger animals are by the naked eye. The tail, both in the male and female, is alſo of an amazing conſtruction; that of the female terminating in a ſharp point, with which ſhe perforates the ground, in order to depoſit her eggs.

CRASSIROSTRÆ. A genus of ſmall birds diſtinguiſhed by the thickneſs of their beaks; of which kind are the ſparrow, the green-finch, and ſeveral others.

CRAVANT. An appellation given by Bellonius, and ſome other authors, to the barnacle, a ſmall ſpecies of wild-gooſe common on the Lancaſhire coaſts during the winter ſeaſon.

CRAX. A name given by the ancients to the ortygometra, or daker hen; a bird ſomewhat larger than the quail, and very common in Ireland, and ſome of the northern counties of England.

CRAX. The name of a diſtinct genus of birds of the gallinæ claſs in the Linnæan ſyſtem of zoology; the diſtinguiſhing characters of which are, that the baſe of the bill is covered with a caſe in each mandible; and the head is ornamented with a kind of feathery crown, bending backwards. Of theſe birds there are five ſpecies.

CRAY-FISH. A ſpecies of cancer, or cancer aſtacus, in the Linnæan ſyſtem.

The Cray-Fiſh differs very little from the lobſter, except in the ſmallneſs of it's ſize. The body is round; and the head is terminated by a pretty broad horn, ſhort and pointed, under which the eyes are placed. On the fore-part of the head there are four horns or feelers, two long and two ſhort, whoſe ends terminate in hairs. The pinchers, which conſiſt of five joints, are forked, rough, and dentated; and on each ſide there are four feet, the two firſt of which towards the pinchers are cloven at the end, and the next two are each furniſhed with a ſpur. The upper part of the body is covered with five ſcaly plates; and there are five fins on the tail.

Cray-Fiſh are found in almoſt every river, and even brook, in England; and their fleſh is reckoned cooling, moiſtening, and well adapted to nouriſh ſuch as labour under atrophies. There are various methods of dreſſing them: they may be either boiled or fryed, and then converted into a variety of diſhes; but no parts of them are proper for food, except their claws and tails. Preparations and broths of Cray-Fiſh not only conſtitute a pleaſant aliment, but likewiſe anſwer ſome medicinal purpoſes, as poſſeſſing a moiſtening quality, and ſheathing up and correcting acrimony. The broth is made from four or five of theſe fiſh; which, after having their heads cut off, and their inteſtines extracted, are bruiſed and boiled in the broth or fleſh of poultry till they become red; after which, the liquor is ſtrained off, and ſeaſoned as the caſe may require.

Cray-Fiſh are reckoned to be in ſeaſon during the ſummer months; but the delicacy of their flavour depends in a great meaſure on their food. When they receive proper aliment, their fleſh has an agreeable reliſh; but when they feed on putrid ſubſtances, it is thereby often rendered very unpalatable.

In the River Obra, on the borders of Sileſia, Cray-Fiſh are prodigiouſly numerous; but they poſſeſs ſuch a bitter aromatic flavour, as to be ſcarcely eatable. This taſte probably ariſes from the vaſt quantities of calamus aromaticus growing on the banks of that river, the roots of which theſe animals devour with greedineſs. Cray-Fiſh are likewiſe very plentiful in the River Don in Muſcovy, where they are caught, piled in heaps, and left to putrify; after which the ſtones called crabs eyes are picked out. Being very fond of human fleſh, they flock in great numbers to any carcaſe accidentally immerſed in the water, and ſeldom leave it while a ſingle particle remains: they alſo feed on dead frogs, or any other animals which come in their way. In Switzerland, there are ſome Cray-Fiſh which are red while alive, and others blueiſh; and ſome kinds alſo which will never become red by boiling, but maintain their original ſable hue.

The Cray-Fiſh diſcharges it's ſtomach, and, as Geoffrey thinks, it's inteſtines alſo; which, as they putrify and diſſolve, ſerve the animal for food; and, during the time of the reformation, the old ſtomach ſeems to be the firſt food which the new one digeſts. It is only at this period that the ſtones called crabs eyes are to be found: they begin to be formed when the old ſtomach is deſtroyed; and are afterwards wrapped up in the new one, till they gradually diſappear by a ſlow decreaſe.

CREEPER. The Engliſh name for a ſpecies of iſpida, which though very diſſimilar to the, common

common king's-fiſher both in colour and figure, on account of the ſtructure of it's feet, is comprehended under that genus. It is likewiſe called the certhia, and certhius, by authors; and, in Engliſh, the ox-eye. The ſpecies are numerous.

Creeper, Common. This bird adheres to the trunks and boughs of trees, and creeps on them like the wood-pecker. It is about the ſize of a wren; and is furniſhed with a long, ſlender, ſharp bill, incurvated downwards, by which mark it is diſtinguiſhed from all other birds. The tongue, which is about the length of the bill, is hard and ſtiff at the point, and ſharp like a goad; the longeſt feathers of the tail are ſharp and ſtiff, as in pies; and the upper part of the body is duſky, and the lower whitiſh.

Creeper, Black and Yellow. This bird, which is a native of Jamaica, is about four inches long. It agrees pretty much with the common Creeper; having a ſlender, ſharp-pointed bill, a little bending down, and black. The head, neck, throat, back, wings, and tail, are black; and over each eye there is the appearance of a white line. The baſes of the great quills next the belly are white; and all the tail-feathers, except the two central ones, are tipped with white. The breaſt, the rump, and the borders of the wings, when they fall on the breaſt, are a fine bright yellow, a little inclining to a gold colour. The thighs, the lower belly, and covert-feathers under the tail, are of a pale yellow or whitiſh colour; and the legs and feet are duſky. Sir Hans Sloan ſays, that the rump above the tail is yellowiſh; and that the legs are no more than half an inch long.

Creeper, Blue. This bird has a ſmall head, a ſhort tail, and a long bill agreeing with the Creeper kind. The bill is about an inch long, ſlender, incurvated downwards, and blackiſh; and at the baſe of the upper mandible the feathers are black, and united to a black line drawn from the corners of the mouth to the eyes. The head and body are a fine deep blue; the prime-feathers, as well as the row next above them, are black; and the leſſer coverts of the wings are blue. The tail is ſhort, and of a blackiſh colour; and the legs, feet, and claws, are of a light yellow brown.

Creeper, Black and Red Indian. This curious little bird has a black bill, which extends pretty far into the head: it's upper ſide is of a deep black colour, except ſome bright ſcarlet ſpots, the firſt of which covers the entire crown of the head; the ſecond is in the middle of the hinder part of the neck; the third croſſes the middle of the back; and the fourth and laſt takes up the covert-feathers of the tail. The tail and wings are wholly black, extremely gloſſy, and reflecting a deep blue. The entire under-ſide, the throat, neck, breaſt, belly, thighs, and covert-feathers under the tail, are white; and the legs, feet, and claws, are black.

This bird is a native of Bengal in the Eaſt Indies, and was firſt figured and deſcribed by Edwards.

Creeper, Black and Blue. The bill of this ſpecies is pointed, ſlender, arched both above and below, and of a blackiſh colour; the crown of the head is a pale green; and round the baſe of the upper mandible there are blackiſh feathers, paſſing in black lines on both ſides of the head, in which the eyes are placed. The ſides of the head, the hinder part of the neck, the lower part of the back, the rump, the covert-feathers of the tail, a bar interſecting the ſuperior part of the wings, and the whole under-ſide of the bird, are of a very fine ultramarine blue colour. A broad black line croſſes the upper part of the back; the tail, and the exterior ſides of the wings, are black; the inſides of the wings are of a beautiful yellow colour, except round the ridges and the tips of the quills, which are duſky; and the legs and feet are orange-coloured. This bird is probably the ſame with the guira coereba of Marcgrave, deſcribed in his Hiſtory of Brazil.

Creeper, Purple Indian. This ſpecies has a long, black, arched bill; the head, neck, back, rump, and covert-feathers of the wings, are of a dark blueiſh purple colour; the tail is black; the belly, thighs, covert-feathers under the tail, and quill-feathers of the wings, are of a duſky brown; the inſide of the wings, and the under-ſide of the tail, are of a dark cinereous hue; the breaſt is tinged with green; on each ſide there is a ſpot of yellow or gold-coloured feathers; and the legs and feet are black. This bird is a native of the Eaſt Indies.

Creeper, Green. The bill of this ſpecies is incurvated downwards like the reſt of the family, and is of a duſky hue, except at the baſe of the lower mandible, where it is fleſh-coloured. The whole bird is of a fine parrot-green colour, except the tips of the quills, which are duſky. The top of the head, the neck, back, wings, and tail, are darkeſt, and appear of a blueiſh green; the whole under-ſide, as well as the the rump, are lighter, and ſomewhat inclining to yellow; and the legs and feet are duſky, or black. This bird is a native of the Spaniſh Weſt Indies.

Creeper, New Zealand. This bird, which is pretty large, has a black bill; the head, neck, breaſt, back, and quill-feathers, are of a gloſſy deep green; the firſt row of the coverts of the wings is a changeable green and blue, and the ſecond white; the hind-part of the neck is marked with a large rich blue creſcent, in which ſome curled white feathers project beyond the reſt; and underneath, on each ſide of the throat, there is a bunch of white curled feathers. The tail is long, and of a deep green colour, except it's coverts, which are blue; and the legs are of a duſky hue.

Creeper, Luçon. Sonnerat, in his Voyage to New Guinea, mentions three ſpecies of Creepers which he met with at the iſle of Luçon.

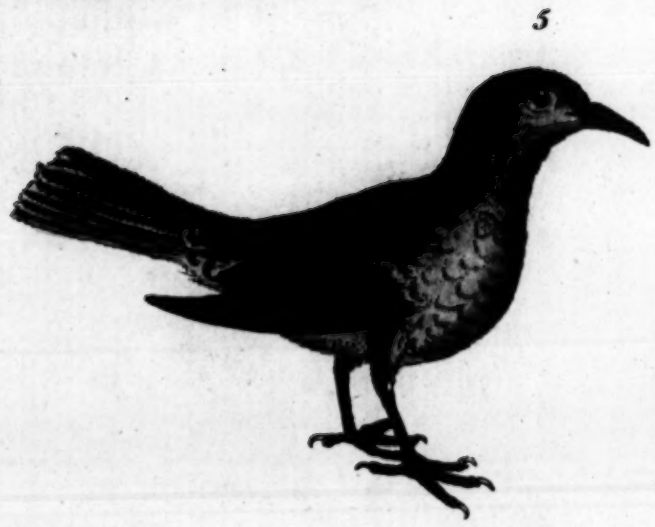
The firſt ſpecies has an olive-coloured body; the throat and top of the breaſt are of a ſhining blue; the belly is a bright yellow; and the bill and feet are black.

The upper part of the body of the ſecond ſpecies, which is probably the female of the preceding, is alſo of the ſame olive colour, but leſs deep; the throat, breaſt, and belly, are yellow; and the feet and bill are black.

The crown of the head of the third ſpecies, which is by far the moſt beautiful, is of a pale green colour; the throat is a bright violet; the belly is a vivid red; the back, and the leſſer coverts of the wings, are of a golden hue; the larger coverts are black; and the feathers which ſurround the vent and the tail are of the colour of poliſhed ſteel, with a greeniſh caſt.

CREX. A bird ſo called from it's continually repeating Crex, Crex. The beak is of a moderate length, and of a black colour; the head and legs are alſo black; the neck, breaſt, and back, are white; and the wings are black variegated with white. It feeds on inſects, and generally makes a loud noiſe while it continues on the wing. The

name



1. BLACK AND BLUE CREEPER. 2. BLACK AND RED INDIAN CREEPER. 3. BLACK AND YELLOW CREEPER. 4. BLUE CREEPER. 5. GREEN CREEPER. 6. LUCON CREEPER. 7. NEW-ZEALAND CREEPER. 8. PURPLE INDIAN CREEPER.

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name Crex has likewiſe been applied to the crake, or land-rail; but it does not appear that they are the ſame.

CRICETUS. This animal is ſometimes called the German rat, but is deſcribed by Buffon under the appellation of hamſter. It is of the ſize of the water-rat, which it reſembles in the ſmallneſs of it's eyes and the ſhortneſs of it's tail. With reſpect to colour, it is rather of a deeper brown than the Norway rat, except the belly and legs, which are a dirty yellow. But the characters by which it may be diſtinguiſhed from all others, are two pouches, like thoſe of a baboon, on each ſide of it's jaw, under the ſkin, into which it generally crams a large quantity of proviſions. Theſe bags, which are oblong, and when filled are each of the ſize of a large walnut, open into the mouth, and fall back along the neck to the ſhoulder: into theſe the animal thruſts the ſurplus of thoſe fruits or grains which it gathers in the field, after the immediate calls of hunger are ſatisfied; and, thus loaded, it returns to it's hole, in order to depoſit the ſpoil, as a reſource againſt the winter ſeaſon. The ſize, the fecundity, and the voracious appetites of this animal, render it one of the greateſt peſts in thoſe countries of which it is a native, and every method is practiſed for it's extermination.

But though the Cricetus is very noxious to mankind, if conſidered with regard to thoſe inſtincts which conduce to it's own ſupport and convenience, it claims our admiration. It's hole, which offers a very curious object for contemplation, and evinces a degree of ſkill infinitely ſuperior to the reſt of the rat kind, conſiſts of a variety of apartments fitted up for the different occaſions of the tenant: it is generally formed on an inclining ground; and is always furniſhed with two entrances, one perpendicular, and the other oblique; but, if there be more than one in a family, there are as many perpendicular holes as inhabitants. The perpendicular hole is that through which the animal uſually aſcends and deſcends; while the oblique one admits a freer current of air, as well as affords a ſafe egreſs when the other paſſage is accidentally ſtopped up. Within a foot of the perpendicular hole, there are two more, where this creature's proviſions are depoſited: theſe are much more ſpacious than the former, and are large in proportion to the quantity of ſtores. Excluſive of theſe, there is ſtill another apartment, warmly lined with graſs and ſtraw, in which the female brings forth her young. All theſe communicate with each other, and collectively occupy a ſpace of ten or twelve feet in diameter. The ſtore-houſes are generally furniſhed with dry corn, well cleaned; and ſometimes corn in the ear, beans, and peas.

Theſe animals uſually begin to lay in their winter ſtock about the latter end of Auguſt; and, as ſoon as each magazine is filled, they carefully cover the mouth of it with earth, in ſo compleat a manner, that it is difficult to diſcover where the mould has been turned. The only means of finding out theſe ſubterraneous retreats, are to obſerve their oblique entrances, which generally have ſmall quantities of earth before them; and theſe, though often ſeveral yards from the perpendicular retreats, lead thoſe who are ſkilled in the ſearch to the tenanted apartments. Many German peaſants procure a livelihood by finding out and bringing off the hoards of theſe creatures, which, in a fruitful ſeaſon, often furniſh two buſhels of good grain in each reſervoir. Like moſt others of the rat kind, they generate twice or thrice in a year, bringing forth five or ſix at a time. At ſome periods they are aſtoniſhingly numerous; and, at others, they are leſs ſo. Moiſt ſeaſons aſſiſt their propagation; and it often happens that, at ſuch times, their devaſtations produce an univerſal famine. Fortunately, however, for mankind, theſe creatures, like the reſt of their kind, deſtroy each other; and, of two which Buffon kept in a cage, male and female, the latter killed and devoured the former.

The fur of theſe animals is reckoned exceedingly valuable; for which reaſon the natives are very aſſiduous in their deſtruction. They have uſually brown backs, and white bellies: many of them, however, are of a grey colour; which variation probably ariſes from a difference in their ages. They are very common in Thuringia and Miſnia; and, according to St. Jerome, there are vaſt numbers of them in Paleſtine.

CRICKET. A genus of inſects of the hemiptera claſs, nearly allied to the locuſt kind. Their diſtinguiſhing characteriſtics are theſe: the feelers are briſtly; the covers of the wings are membranaceous; and the legs are adapted for leaping.

Cricket, Common. This inſect greatly reſembles the locuſt in it's conformation, it's manner of ruminating, it's voice, it's leaping, and it's methods of propagation: but it entirely differs from that inſect in it's colour, which is uniformly of a ruſty brown; in it's food, which is more various; and in it's place of reſidence, which is uſually the warmeſt chink of an oven or hearth. The ſmalleſt openings afford ſhelter for theſe animals; and, wherever they fix their abodes, they are ſure to propagate. Being of a very chilly nature, they ſeldom leave the heat; and, if undiſturbed, frequently hop from their retreats, in order to chirp at the blaze of the fire. Whether the voice of the Cricket is formed in the ſame manner with that of the graſhopper, namely, by a fine membrane at the baſe of the wings, moved by a muſcle, and which, being coiled up, gives a ſound like that of a quail-pipe, is not yet well aſcertained; nor are we acquainted with the uſe of it's voice, ſince anatomical inſpection has not been able to diſcover the ſmalleſt auditory organs. Still, however, it is probable that theſe animals poſſeſs the power of diſtinguiſhing ſounds, though in a leſs perfect manner than the ſuperior ranks of nature, for they frequently call on and anſwer each other; though it ſhould be obſerved, that the males only are vocal.

As Crickets live chiefly in the dark, their eyes ſeem fitted for the gloomineſs of their abodes; and thoſe who would ſurprize them, need only light a candle ſuddenly, by which means they will be ſo dazzled and bewildered, as to be incapable of finding out their retreats.

Theſe little animals, which are very voracious, will eat bread, flour, and meat; but are particularly fond of ſugar. They never drink, but continue for months together at the backs of chimnies, where they cannot poſſibly receive any moiſture. The warmth of their ſituation increaſes their mirth and loquacity; and, except in very cold weather, they never intermit their chirping, which is as diſguſting to ſome people as it is grateful to others. The celebrated Scaliger, who is ſaid to have been greatly delighted with the chirping of Crickets, uſually kept ſeveral of them in a box, placed in a warm ſituation. Some people, on the contrary, who think that their voices are ominous, uſe all methods to deſtroy them; and Lælius in-

forms us, that a certain woman, who was very much incommoded by theſe animals, and had in vain tried many expedients to baniſh them from her habitation, at length accidentally ſucceeded as follows: having invited a few of her acquaintances for the purpoſe of celebrating the nuptials of two of her particular friends, in order to increaſe the feſtivity of the entertainment, ſhe procured ſeveral drums and trumpets; the noiſe of which inſtruments had ſuch an aſtoniſhing effect on theſe inſects, that they immediately forſook their retreats, for they were never heard in future.

CRICKET, MOLE. This animal is the largeſt of all the Cricket kind with which we are acquainted, being two inches and a half in length, and three quarters of an inch in breadth. The colour is a duſky brown; and, at the extremity of the tail, there are two hairy excreſcences, ſomewhat reſembling the tail of a mouſe. The body, which conſiſts of eight ſcaly joints or ſeparate folds, is brown above, but more deeply tinged below; the wings, which are long and narrow, terminate in ſharp points, each having a longitudinal blackiſh line; the ſhield of the breaſt is of a firm texture, hairy, and blackiſh; the fore-feet, which are the principal inſtruments made uſe of by this animal in burrowing into the earth, are ſtrong, webbed, and hairy: it generally, however, runs backward; but it commonly reſides under ground, into which it penetrates more expeditiouſly than the mole. It is alſo ſuppoſed by ſome naturaliſts to be amphibious, and to be capable of living under water as well as under ground.

No inſect is more formidable to gardeners than the Mole Cricket, as it chiefly inhabits that earth which lies light, and where it finds ſufficient nouriſhment under the ſurface. Thus, in a ſingle night's time, it will traverſe the whole of a newly-ſown furrow, and rob it of all it's contents. It's legs are conſtructed in ſuch a manner, that it can penetrate the earth in every direction, before, behind, and above. During the night, it ventures from it's ſubterraneous habitation; and, like the common Cricket, exerciſes it's chirping call. When the female is fecundated, ſhe forms a cell of clammy earth, the inſide of which is ſufficiently capacious to contain two hazel-nuts; and in it ſhe lays her eggs: the whole neſt, which is about the ſize of a common hen's egg, is cloſed up on every ſide. The eggs, generally amounting to about a hundred and fifty, which are white, and each about the ſize of a carraway comfit, are carefully covered, as well to defend them from the injuries of the weather, as from the attacks of the black beetle; which being itſelf an under-ground inhabitant, would certainly, but for this precaution, either devour or deſtroy them. In order to prevent this calamity, the female Mole Cricket frequently places herſelf near the entrance of the neſt; and, whenever the beetle attempts to ſeize it's prey, the guardian inſect catches it behind, and bites it aſunder.

Nothing can poſſibly exceed the care and aſſiduity of theſe animals in the preſervation of their young. Wherever a neſt is ſituated, fortifications, avenues, and entrenchments, ſurround it: there are alſo numerous meanders which lead to it; and a ditch encompaſſes the whole, which few other inſects are capable of paſſing. But the diligence of thoſe Mole Crickets does not terminate here: at the approach of winter they move their neſts entirely away, and ſink them deeper in the ground; ſo that the influence of the froſt cannot retard the maturation of their young brood. When the weather grows milder, they raiſe their magazines in proportion; till at laſt they are brought as near the ſurface as poſſible, without being wholly expoſed to view, in order to receive the genial influence of the ſun: but ſhould the froſt unexpectedly return, they again ſink them to their former depth.

CRICKET, FIELD. This ſpecies is of a blackiſh colour; with a large head in proportion to the body, and full prominent eyes. The forehead is furniſhed with two feelers without joints, but they are capable of inflection at the animal's pleaſure. It has ſix legs of the ſame colour with the body; the hindmoſt of which being the longeſt, enables the inſect to leap with the greater facility. The wings ſeem to be ſlightly variegated with ſculptures, which cover almoſt the whole body; and the tail is forked. The body of the male is leſs than that of the female; and the latter has graſs-green eyes, red feelers, and a tridental tail.

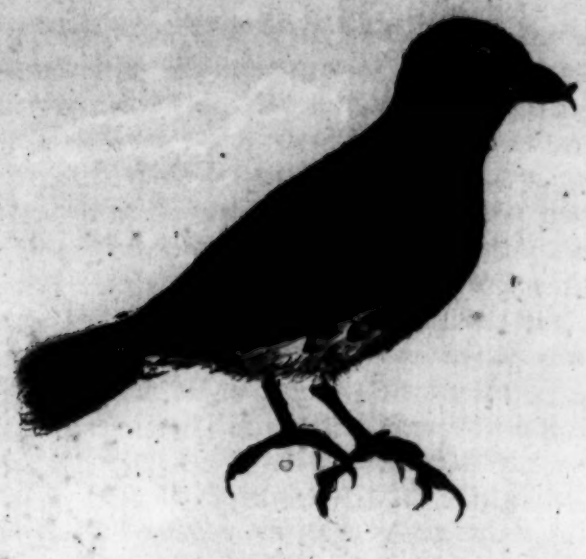
Theſe inſects make their neſts in the fields during the ſummer ſeaſon, where they lie concealed in a mild winter; but, when a ſevere one happens, they burrow in the ground. They make a very ſingular noiſe with their wings; chirp day and night; and delight to baſk in the ſun, ſitting at the mouths of their holes.

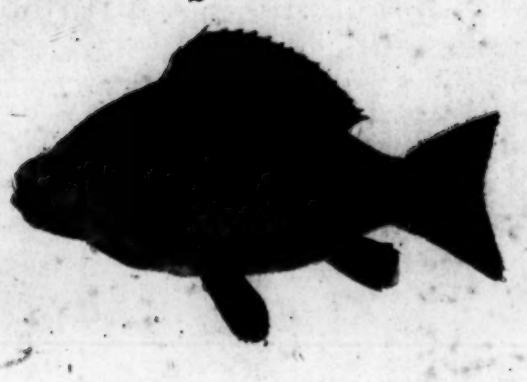
CRICKET, WATER. This inſect has a pentagonal head, with prominent, globous, black eyes; near the mouth there are very ſhort feelers; and on each ſide there are three feet, the hindmoſt being conſiderably the longeſt. The body is of a browniſh, or rather a whitiſh black colour; the rudiments of wings appear on the back; and the tail is forked. It differs from the land Cricket in having a more prominent head, and a ſhort neck; and the wings ſeem entirely uſeleſs for flight, though they aſſiſt the animal in riſing. It is commonly ſeen ſitting on aquatic plants, and emits a ſound almoſt ſimilar to that of the land Cricket.

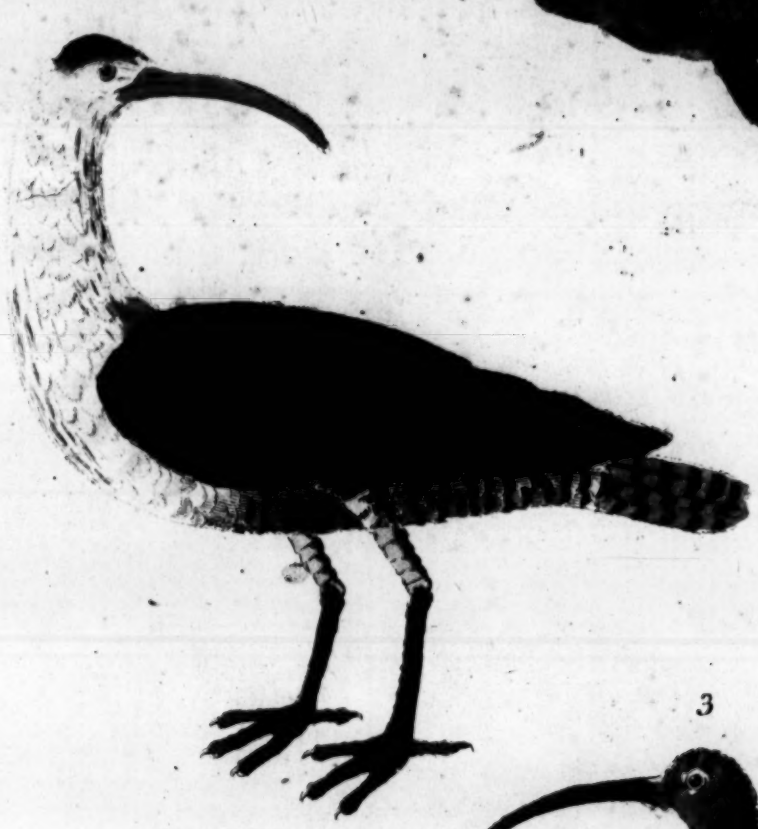
CRISTA GALLI. An appellation given to a particular ſpecies of oyſter, called by ſome auris porci, or the hog's-ear ſhell.

CROCEUS. An amphibious animal mentioned by ſome authors, which is neither fiſh nor bird, but both. During the ſummer, it aſſumes the form of a bird of a ſaffron colour, and frequents the mountains; but, towards the end of autumn, it returns to the ſea, and becomes a fiſh. Where this creature is found, or what are it's particular habits, is not aſcertained; though the ſame fertility of invention which gave it birth might have alſo furniſhed it's hiſtory.

CROCODILE. The largeſt animal of the lizard kind. It grows to the length of twenty-five feet and upwards, and is about the thickneſs of a man's body. The noſe ſomewhat reſembles that of a hog; the mouth is enormouſly large; and the ſuperior jaw moving in the opening of it, gives the creature a very terrible aſpect. The teeth, which are large, white, and numerous, are diſpoſed like thoſe of a comb; and in the lower jaw there are two very long ones which paſs into cavities in the upper. The legs are placed ſideways; and the feet are armed with extremely ſharp claws, of which there are five on the fore ones, and four on the hind. The length of the tail is equal to that of the whole body; the ſkin of the belly is ſoft, and eaſily penetrable; but that of the reſt of the body is covered with ſtrong prickly ſcales, which are proof againſt either ſpears or muſquet-balls. The colour of ſome of theſe animals is a duſky brown, with







1. LESSER CROSS-BILL. 2. CRUSIAN. 3. CURLEW. 4. SPECKLED CURLEW. 5. SPOTTED CUKUCUI.
6. CUSHEW-BIRD. 7. CUTTLE-FISH. 8. CYPRÆA.

Plate XXXVI.

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with an admixture of grey; and, of others, a reddiſh yellow; but the former is the moſt common. This tremendous animal is a native of the rivers of the torrid zone, where it lies concealed among ſedges and reeds till an opportunity offers of attacking ſome other animal, man himſelf not excepted. It's general food, however, is fiſh, of which it devours immenſe quantities. It's eggs are about the ſize of thoſe of a gooſe, of which it lays fifty or ſixty for a brood, burying them in the ſand, and then leaving them to be impregnated by the heat of the ſun. For a full and particular deſcription of this animal, ſee ALLIGATOR.

CROCOTTA. A name given by the ancients to a very fierce and terrible animal produced by copulation between the large hyæna and the lioneſs.

CROOK-BACK FISH. The name of this fiſh is derived from it's very ſingular ſhape. It's ſkin is ſmooth, having no ſcales; it's belly is white; and it's fins and tail are yellow. It grows to upwards of four feet in length; and it's fleſh is much admired all over the Eaſt Indies on account of it's agreeable flavour.

CROPPER. A particular ſpecies of pigeon, called by Moore the columba gutturoſa Bataviæ. It's figure is clumſy; and it receives it's name from a large crop, or bag of wind, under it's beak, which it can either raiſe or depreſs at pleaſure. The legs, which are thick and ſhort, are covered with feathers down to the very feet; the feathers on the thighs hang looſe; and the legs are placed at an uncommon diſtance from each other. The crop, which is large, hangs very low; and the eyes are of a gravelly hue. Pigeons of this kind are of various colours.

CROSS-BILL. A genus of birds of the order of paſſeres, in the Linnæan ſyſtem of zoology; the diſtinguiſhing characters of which are, that the tongue is plain, equal, and whole; and that the beak is large, thick, ſhort, crooked, and convex both ways.

The Croſs-Bill is an inconſtant viſitant of the Britiſh iſlands; but Geſner informs us that, in Germany and Switzerland, it inhabits the pine-foreſts, where it breeds ſo early as the months of January and February. It feeds on the ſeeds of the cones of pines and firs, and is very dextrous in ſcaling them; for which purpoſe the croſs ſtructure of the lower mandible of the bill is admirably adapted. It alſo ſubſiſts on hempſeed and the kernels of apples.

It is indiſputably true that Croſs-Bills change their colours, or rather the ſhades of their colours; the males, which are uſually red, varying at certain ſeaſons to a deep red, to an orange, or to a kind of yellow; and the females, which are green, changing to different varieties of the ſame colour.

There are two ſorts of this bird, the largeſt of which is very rarely ſeen; but Edwards thus deſcribes the leſſer.

CROSS-BILL, LESSER. The bill is pretty thick and ſtrong, and of a duſky colour; the eyes are a dark hazel; the head, neck, breaſt, back, and rump, are a very deep red; the upper ſides of the tail and wings are duſky; the edges of the quills and the tail-feathers are reddiſh; the inſides of the wings and under-ſide of the tail are aſh-coloured; the thighs, lower belly, and covert-feathers beneath the tail, are whitiſh, with ſome duſky ſpots; and the legs and feet are of a tawny fleſh-colour. The female is of a yellow-greeniſh hue where the male is red; but, in other reſpects, they pretty much agree.

CROTALOPHORUS ANGUIS. A term frequently uſed to expreſs the rattle-ſnake.

Crotalophorus Anguis is alſo ſometimes applied to a remarkable ſpecies of ſerpent more uſually known by the name of cobra de capello.

CROW. The carrion or common Crow reſembles the raven in the ſhape of it's body, it's appetites, and the manner of bringing up it's young. It feeds on carrion, or any other filth; and, when that cannot be obtained, it contents itſelf with grain and inſects. Like the raven, it will pick out the eyes of lambs as ſoon as they are dropped; and indeed it only differs from that bird in being leſs bold, leſs docile, and leſs favoured by mankind.

England produces more birds of this kind than any other country in Europe. In the reign of Henry VIII. they were grown ſo numerous, and deemed ſo injurious to the farmer, that they were regarded as an evil worthy of parliamentary redreſs; and an act was accordingly paſſed, in the twenty-fourth year of the reign of that prince, for their deſtruction, in which rooks and choughs were alſo included. Every hamlet was to provide crow-nets for ten years; and, during that ſpace, the inhabitants were obliged to aſſemble at certain times, in order to project the moſt effectual methods for extirpating them. But though Crows are very numerous in England, they are ſo uncommon in Sweden, that Linnæus mentions them only as birds he once knew killed there. The Crow lays about the ſame number of eggs as the raven, and they are of the like colour. Both of theſe birds are ſometimes found white, or pyed; but ſuch are eſteemed no inconſiderable objects of curioſity. The length of the Crow is about eighteen inches; the expanſion of it's wings is two feet two inches; and it's weight is about twenty ounces.

CROW, ROYSTON, OR HOODED. The bill of this ſpecies agrees in ſhape with that of the rook; and they reſemble each other in their habits, both of them flying in flocks, and feeding on inſects. The Royſton, or Hooded Crow, which is a bird of paſſage, viſits England in the beginning of winter, and leaves it with the woodcock. It is found both in the inland and maritime parts of this kingdom; and, in the latter, it feeds on crabs and ſhell-fiſh.

This kind of Crow is very common in Scotland; and in many parts of the Highlands, as well as in all the Hebrides, Orknies, and Shetland iſles, is the only genuine ſpecies, the carrion and the rook being there entirely unknown. It breeds and continues in theſe places during the whole year; and, perhaps, thoſe of them which inhabit the northern parts of Europe are ſuch as migrate here. In the Highlands, they build indifferently in all kinds of trees; lay ſix eggs; have ſhriller notes than the common Crows; and are much more miſchievous.

Belon, Geſner, and Aldrovandus, all agree, that the Crow is a bird of paſſage in their reſpective countries; and that it viſits high mountains in the breeding ſeaſon, and deſcends into the plains on the approach of winter.

The length of this ſpecies is about twenty-two inches, the breadth twenty-three inches, and the weight twenty-two ounces. The head, the underſide of the neck, and the wings, are black, finely gloſſed with blue; the back, breaſt, belly, and upper part of the neck, are of a pale aſh-colour; the legs

legs are black, and ſmaller than thoſe of the rook; and the bottoms of the toes, which are very broad and flat, enable it to walk, without ſinking, in muddy and marſhy grounds, to which it greatly reſorts.

CROW, INDIAN. This ſpecies, which has a yellow ſtreak, of an uncommon form, running from the top of the head to the eyes, is of the colour of the common pigeon; and the laſt quill-feathers of the wings are each marked with a red ſtreak in the middle. There are two birds of this kind; the bill and legs of the largeſt are of a bright yellow; but the ſmalleſt is wholly red, mixed with a little yellow.

CROW, CAROLINIAN. Lawſon affirms that the fleſh of this ſpecies is as proper for food, and as palatable, as that of the pigeon. It never feeds on carrion, but is a great enemy to corn-fields; and it's voice and manner of building it's neſt reſemble thoſe of the rook.

CROWN IMPERIAL SHELL. A ſpecies of the voluta.

CRUCIAN. This fiſh, which is called the cyprinus caraſſius by Linnæus, is common in many of the fiſh-ponds in the vicinity of London, and other parts of the ſouth of England; but, according to Pennant, is not a native fiſh. It is very deep and thick; the back is much arched; the dorſal fin conſiſts of nineteen rays, the two firſt of which are ſtrong and ſerrated; the pectoral fins have each thirteen rays, the ventral nine, and the anal ſeven or eight; the lateral line runs parallel; and the tail is almoſt even at the extremity.

This fiſh is generally of a deep yellow colour; and the fleſh is coarſe, and not much eſteemed among thoſe who have higher luxuries at command.

CRUSTACEOUS FISH. A name of diſtinction given to ſuch fiſhes as are covered with ſhells compoſed of ſeveral pieces or ſcales, ſuch as crabs and lobſters. Theſe ſhells are uſually ſofter than thoſe of the teſtaceous kind, which conſiſt of a ſingle piece, and are commonly much thicker and ſtronger than the former; ſuch as thoſe of the oyſter, ſcallop, and cockle.

CRUYSHAGE. A fiſh of the ſhark kind, ſomewhat approaching to that ſingular one called the zygæna, but much leſs monſtrous, it's head being only triangular, or ſomething of the ſhape of a heart; whence Willughby has named it zygænæ affinis capite triangulo. The eyes are very ſmall, and placed at the ſides of the head; and the mouth, which is ſmall and triangular, and ſituated a great way beyond the end of the noſe, is furniſhed with three rows of very minute teeth.

CUCKOW. A diſtinct genus of birds of the order of picæ in the Linnæan ſyſtem of zoology; the characters of which are, that the feet are adapted for climbing, having two toes before, and two behind; that the bill is ſmooth, and ſomewhat arched; that the tail is whole, and compoſed of ten feathers; that the tongue is ſhort and membranaceous, and terminated by hairs; and that the noſtrils are prominent. Linnæus enumerates twenty-two ſpecies.

The note of the Cuckow is univerſally known; but it's hiſtory and nature are enveloped in obſcurity. It has been aſſerted by ſome, that this bird devours it's parent; and that it changes it's nature with the ſeaſon, and becomes a ſparrow-hawk: but theſe legends have long ſince been ſufficiently confuted. Still, however, it remains a ſecret where the Cuckow reſides in winter, and how it is nouriſhed during that inclement ſeaſon.

The claws and bill of the Cuckow are ſmaller and weaker than thoſe of other rapacious fowls. This ſingular bird, which is ſomewhat leſs than the pigeon, ſhaped like the magpie, and of a greyiſh colour, is diſtinguiſhed from all others by it's round, prominent noſtrils, on the ſurface of the bill. The lower part of the body is of a yellowiſh colour, with black tranſverſe lines under the throat, and on the top of the breaſt; the head, the upper part of the body, and the wings, are beautifully marked with tawny and black tranſparent ſtripes; and on the top of the head there are a few white ſpots. The extremities of the feathers on the rump and the bottom of the back are white; and the inner edges of the exterior parts of the wings are painted with large tranſverſe white ſpots. The tail, which is pretty long, is tranſverſely marked with black and tawny ſtreaks; and on the exterior edges of the feathers there are ſeveral white ſpots. The legs are ſhort, and covered with feathers down to the very feet, which are weak, and yellowiſh; and the claws are nearly of the ſame colour. It has four toes, two of which are placed before, and two behind; and the mouth is large, and yellowiſh on the inſide.

After having diſappeared during the winter, the Cuckow is diſcovered in this country early in the ſpring by means of it's well-known voice. It is indeed ſilent for ſome little time after it's arrival; and, when it exerts it's note, it is only a call to love uſed by the male, which is commonly perched on a dead tree, or bare bough, repeating his ſong, which he relinquiſhes as ſoon as the amorous ſeaſon is paſt. The note of this bird is ſo uniform, that his name, in every language, ſeems to have been derived from it; and in all countries it is uſed in the ſame opprobrious ſenſe. This reproach, however, probably originated from the Cuckow's making uſe of the neſt of a different bird, in which to depoſit it's eggs, and leaving the care of it's young to ſome other of the feathered tribe. A water-wagtail, or even a hedge-ſparrow, generally officiates as nurſe to the Cuckow's young brood; and, if they happen to be hatched at the ſame time with the genuine offſpring, they quickly deſtroy them by overlaying, as their magnitude is very ſoon greatly ſuperior.

From the curious voice of the Cuckow, the farmer may be inſtructed in the real advancement of the ſeaſon. Human calculations, it is well known, are liable to much fallibility; but, as the note of this bird depends on a certain temperature of the air, it may with no ſmall degree of propriety be accounted an unerring guide.

The note of the Cuckow, though uniform, is yet pleaſant; and, from an aſſociation of ideas, ſeldom recurs to the memory without putting us in mind of the ſweets of that ſeaſon in which nature wantons in beautiful luxuriance, the eye is gratified with the moſt pleaſing objects, and the ear with the moſt delightful harmony.

When the Cuckow is ſufficiently fledged, and of courſe prepared for flight, it does not long tend it's ſuppoſed parent; for, as it's appetites for inſect-food increaſe, it cannot expect to obtain a ſupply by imitating it's little inſtructor: it therefore takes a final leave of, and ſeldom offers any violence to, it's nurſe. All the little birds, however, who conſider the young Cuckow as their enemy, and revenge the cauſes of their kind by repeated inſults, compoſe the train of it's purſuers: but the wryneck is the moſt active in the chace; and from

hence

1. GREAT SPOTTED CUCKOW. 2. GREEN CUCKOW. 3. INDIAN BLACK CUCKOW.

4. INDIAN BROWN AND SPOTTED CUCKOW. 5. LARK HEELED CUCKOW. 6. LITTLE CUCKOW.

Plate XXXIV.

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hence has been conſidered by many as the provider and attendant of the Cuckow. Yet it is well known that this bird follows it with no amicable intention; but either to inſult it, or as a ſpy who warns the little warblers of the impending danger.

Such are the habits of this bird while it continues in this country; but, on the approach of winter, it totally diſappears, nor can it's paſſage be traced to any other. Some imagine that the Cuckow conceals itſelf in hollow trees; and others, that it paſſes into warmer climates: but which of theſe ſuppoſitions is the true one, cannot be decided on, as nothing has hitherto been related on either ſide that amounts to a certainty. However, the moſt probable conjecture is, that as quails and woodcocks ſhift their habitations in winter, ſo alſo does the Cuckow; but whether it retires to reſt, or whether any perſon has ever obſerved the courſe which it ſteers, we are totally at a loſs to determine.

Some authors have queſtioned whether Cuckows are carnivorous birds; but Reaumur, who bred up ſeveral of them, informs us, that they would not feed either on bread or corn, but that fleſh and inſects were their favourite aliment, though the latter ſeemed to be moſt congenial to their appetites. Their voracity, indeed, is not to be wondered at; for their ſtomachs are ſo very capacious, as to reach from their back-bones to their vents. Nevertheleſs, they are not to be conſidered as birds of prey, being deſtitute of the eſſentials for that purpoſe, namely, ſtrength and courage: but that they are naturally weak and timid, appears by their flying from thoſe ſmaller birds by which they are always purſued.

The Cuckow meaſures fourteen inches in length, and twenty-five in breadth, and weighs about five ounces. The young are of a brown colour mixed with black, though in that ſtate ſome authors have deſcribed them as old ones.

The Cuckow was anciently conſecrated to Jupiter. That god, according to fiction, having rendered the air extremely cold, transformed himſelf into a Cuckow, and repoſed on the boſom of Juno, who received him willingly, (a poetic figure, intimating the ſucceſs of an intrigue;) and Mount Thornax, in Peloponneſus, where this adventure happened, was from that time called the Mountain of the Cuckow.

Cuckow, Great Spotted. This bird, which is ſuppoſed to be an alternate inhabitant of the ſouthern parts of Europe and the northern parts of Africa, has a pretty ſtrong black bill, ſomewhat long in proportion to it's thickneſs, and a little incurvated downwards; the lower mandible being ſlightly angulated underneath. A black line is extended backwards from the angles of the mouth to the hinder part of the head, narroweſt at the extremes, and broadeſt in the middle, in which the eyes are placed; the crown of the head is covered with ſoft feathers of a blueiſh aſh-colour, which, from their length and looſeneſs, exhibit the appearance of a creſt; the whole upper ſide of the neck, the back, wings, and tail, are covered with dark brown feathers, the greateſt quills and tails being the darkeſt, and approaching to black. All the wing-feathers, except the greater quills, are tipped with white and very light aſh-colour, as well as the upper covert-feathers of the tail. The two middle feathers of the tail are wholly dark; and all the ſide-feathers, as they gradually ſhorten in length, increaſe in the depth of their white tips. The under-ſide, from the ſides of the head and throat to the breaſt, is of a pretty bright brown; inclining to orange; which colour gradually changes on the belly and thighs to a dirty yellowiſh brown, and ends in the coverts beneath the tail. The inſides of the wings and under-ſide of the tail are of an aſh-colour; the legs are ſhort in proportion; two of the toes ſtand forward, and two backward; the claws are pretty ſtrong, and black; and both legs and feet are covered with black ſcales.

Cuckow, Indian Black. This bird is about the ſize of the Engliſh blackbird; the bill is thicker and ſtronger than in ſome of the kind, and of a bright orange colour; the ſides of the upper mandible, when they fall over the nether, do not run in a ſtraight line, but in a wave; the head, body, wings, and tail, are wholly covered with deep black feathers, without one mark or ſpot of other colours; notwithſtanding which, they poſſeſs ſuch a ſhining luſtre, that, on being expoſed to different lights, they reflect by turns all the various colours of the rainbow. The middle feathers of the tail are pretty long, but the ſide ones become gradually ſhorter; both the tail and the wings are pretty long; and the legs, feet, and claws, are ſhort, thick, and ſtrong.

Edwards remarks, that as it is not eaſy to define how a bird which ſometimes appears entirely black, ſhould on a little turn aſſume ſhining colours, though no ſuch are placed near it to be reflected back, he imagines that theſe feathers muſt have in their compoſition ſome tranſparent, triangular fibres, which operate on the eye in the manner of a priſm.

Cuckow, Indian Brown and Spotted. This ſpecies is about the ſize of the thruſh, but the body is longer in proportion to it's magnitude; the head is large, and the tail very long; the bill is pretty ſtrong and thick for this tribe of birds, and of a dirty yellow inclining to green; the head, the neck, the whole body, the wings, and the tail, are of a brown colour, ſpotted and barred throughout with a lighter brown or white; the head, wings, and back, are darker than the under ſide, ſpotted and intermixed with a lighter brown; though, on the leſſer coverts of the wings, there are ſome white ſpots. The breaſt, belly, thighs, and covert-feathers under the tail, have a great proportion of white a little mixed with orange colour; and all the under-ſide is confuſedly covered with ſemilunar black ſpots. The legs are ſhort, and yellowiſh; the feet are of the ſame colour; two of the toes ſtand backwards, and two forwards; and the claws are duſky.

As this bird ſtrongly reſembles the common Cuckow, it may be inferred by ſuperficial obſervers of nature, that they are in fact the ſame; but it will be proper to remark that they diſagree in ſeveral eſſentials: it is leſs by one-third; the colours on the belly and under-ſide are very different; and the legs correſpond only in their proportionable ſhortneſs. This ſpecies is a native of Bengal; and, in the language of that country, is called boughtſallic.

Cuckow, Green. The bill of this ſpecies is thick and ſhort; the edges of the upper mandible are a little waved; the colour is yellow; and, from the baſe both of the upper and lower mandible, proceed ſome ſtiff black hairs, projecting forwards, ſo as to cover the noſtrils. The ſpace round the eyes, and about an inch down the throat, is covered with black feathers; the top of the head, the neck, back, rump, and leſſer covert-feathers of the

wings, are of a moſt ſplendid green, reflecting blue and gold colours; but the fore-part of the neck is of a very blue green. The wings, externally, are of a light aſh-colour, with very minute tranſverſe, irregular lines, of duſky or black; the tips of the quills are wholly duſky; the inſides of the wings are of a dark aſh-colour; and the inner webs of the quills are white at their baſes. The tail is compoſed of twelve feathers, long in the middle, and gradually ſhortening towards the ſides; the ſix middle feathers are externally green, with black tips, and internally of a dark aſh-colour; and the exterior feathers on each ſide are white above and beneath, with narrow tranſverſe lines of black running their whole lengths, except that their tips are entirely white. The breaſt, belly, and covert-feathers beneath the tail, are of a fine full orange or gold-colour; the thighs and legs, which are inveſted with ſhort feathers down to the feet, are of a light aſh-colour, with tranſverſe lines of black; and the feet and claws are browniſh.

This bird ſeems to be the ſame with the curucui of Marcgrave; whoſe deſcription nearly agrees with the above, except that he makes the under ſide of a vermilion colour.

Cuckow, Lark-Heeled. This ſpecies is ſomewhat larger than the lark; the bill is duſky; the head, neck, back, and coverts of the wings, are ferruginous, marked with ſhort lines of white bounded by black; the belly is a yellowiſh brown; the firſt and ſecond primaries being of a reddiſh brown, and the reſt barred with black. The tail is very long; the exterior feathers are duſky, tipped with brown; and the reſt are marked with black and brown bars. The legs are black; and the interior toe behind is furniſhed with a very long ſtraight claw, after the manner of the lark. This bird is a native of Bengal.

Cuckow, Speckled, of Sonnerat. This ſpecies is twice as large as the European Cuckow. The upper part of the body and the wings are of a very deep brown colour, marked with yellowiſh red ſpots, each of which is of an oblong figure on the head, and round on the neck, the back, and the leſſer coverts of the wings; and the greater coverts are barred tranſverſely with yellow intermixed with ſome black ſpecks. The throat is black, and ſpeckled like the back; the belly and breaſt are of a bright reddiſh colour, tranſverſely barred with black; the tail is long, the feathers which compoſe it being of an equal length, and of a yellowiſh red colour barred with black; the irides are reddiſh; the bill is black; and the feet are of the colour of lead.

Cuckow, Little, of Sonnerat. The upper part of the head of this ſpecies is of a bright grey colour; the neck behind, the back, and the wings, are of an umbre hue; the throat is a ſhining grey; the belly is a bright yellowiſh red; the tail is black above, and barred tranſverſely below with white and black; and the feet and bill are a bright yellow, except that the latter is blackiſh at the point. This bird and the preceding, which are natives of the iſle of Panay, were firſt deſcribed by Sonnerat.

CUCULUS INDICATOR. A bird ſuppoſed to be of the cuckow kind, found in the interior parts of Africa, at a great diſtance from the Cape of Good Hope, and called by the Dutch ſettlers honig-wyzer, or honey-guide. It is conſiderably ſmaller than the common cuckow; and is very remarkable on account of it's conducting thoſe perſons who obſerve it's motions to wild bees-hives, by means of a ſhrill-ſounding note reſembling Cherr, Cherr. The natives anſwer this note by a ſoft whiſtle; and the bird repeats it's call till it arrives at the hives.

CUCULLUS. A genus of ſhells of the voluta kind, called by ſome authors the cornet-ſhells.

CUCURI. A Brazilian fiſh of the ſhark kind, but not very miſchievous. It is called caſſon by the Portugueſe; and is about two feet and a half long. The head ends in a hyperpolic figure; the mouth is placed in a very ſingular manner; it has only one row of very ſmall teeth; the eyes are pretty large; and the belly is of a ſilvery white colour.

CUCURUCU. An American ſerpent of an enormous ſize, being frequently ten or twelve feet long. It is of a yellowiſh colour, ſtrongly variegated with irregular black ſpots. This reptile, which is extremely venomous, is greatly dreaded by the natives; but it's fleſh is very delicious, and highly eſteemed.

CUGNACUARANA. An American beaſt of prey, uſually confounded with the tiger; and deſcribed by Marcgrave as one of the three ſpecies of American tigers, the jaguara and jaguarete being the two others. Thoſe two animals are evidently of the lynx or leopard kind rather than the tiger; and this creature is probably as little related to the tiger as they are. However, it is a large and very fierce animal, of the ſhape of the jaguara, and of a pale tawny colour, but a little duſkier on the back than on the ſides. The hair is very ſhort; and under the chin, and on the belly, there is a ſmall portion of white.

CUGUACUETE and CUGUACUAPARA. Brazilian animals of the caprea kind, which appear to be male and female of the ſame ſpecies, and not diſtinct animals. The former is deſtitute of horns, and is probably the female. The latter has horns compoſed of three branches; one of which ſprings forth near the inſertion, and from this they run up ſingle to the extremity, where they are bifid.

Johnſon has figured this animal under the name of the capreolus marinus. A pair of horns belonging to this curious animal is preſerved in the Britiſh Muſeum.

CUGUPUGUACU. A very large Brazilian fiſh, ſometimes meaſuring ſix feet in length. The head and mouth are large, the laſt being deſtitute of teeth; and the eyes are of a middle ſize, with yellow irides. The tail-fin is almoſt ſquare; and the ſcales are ſmall. The whole head, back, and ſides, are of an aſh-colour mixed with umbre; but, towards the back, the tints become deeper. The belly is whitiſh; and all the fins, together with the tail, are a light brown. The whole head, back, and ſides, are beautifully ſprinkled with ſmall black ſpots; but the belly and fins are of one uniform colour.

CUIRIRI. A Brazilian bird of the ſtarling kind, ſtrongly reſembling the common ſtarling, and only differing from the pitanguaguacu in having a yellow ſpot on it's head; hence many have concluded it to be the male of that ſpecies.

CULEX. The name of a genus of two-winged flies, comprehending gnats, and humble-bee flies; the diſtinguiſhing characteriſtic of which is, that the head is furniſhed with a ſyphon, or ſucker, very ſlender, oblong, and filiform.

CUNEI. A term ſometimes applicable to ſuch tellinæ as have one ſide of the ſhell much more extended than the other.

CUNICULUS. A genus of animals of the lepus or hare kind; in Engliſh, the rabbit.

CUNICULUS AMERICANUS. A name given by ſome authors to the animal called tapeti, a ſmall ſpecies of rabbit.

CUNICULUS BRAZILIENSIS. A ſpecies of rabbit called alſo aperea.

CUNICULUS SIBERICUS. The long-tailed Siberian rabbit, the fur of which is highly eſteemed. During the ſummer months, many of theſe creatures are beautifully variegated with oblique and tranſverſe ſtreaks of black and grey.

CURASSO BIRD. This bird is nearly as large as a hen turkey. It's bill is black at the point, and covered at the baſis with a yellow ſkin; above the bill, between the noſtrils, there is a round hard knob of a yellow colour; and on the head there is a creſt of long black feathers, which project forwards at the points. The whole bird is of a deep ſhining black colour, reflecting blue and purple ſhades, except the lower part of the belly and the covert-feathers under the tail; and the legs and feet are covered with a ſcaly ſkin of a dark fleſh-colour.

Sloane, in his Hiſtory of Jamaica, calls this bird the gallus Indicus.

CURCULIO. A genus of beetles, diſtinguiſhed by having the antennæ affixed to an elongated corneous ſnout. See SCARABÆUS.

CUR-DOG. This variety of the canine race, called alſo the houſe-dog, is about the ſize of a fox, with upright ears, and a ſort of woolly hair under the tail. But ſuch various breeds often propagate together, and produce a mongrel tribe, that it is impoſſible to diſcriminate the different ſpecies of this genus with any degree of accuracy.

CUREMA. A fiſh of the mullet kind, which grows to the length of two feet. It has a very large moveable upper lip; but the under one is ſmall, of a triangular figure, and ſcarcely viſible on account of it's extraordinary minuteneſs. The eyes are large; and the fins are of a fine ſilvery white colour. In other reſpects, it reſembles the common mullet.

CURICACA. A Brazilian bird, called maſarino by the Portugueſe. It is nearly as large as the gooſe, but reſembles the curlew in it's ſhape. The beak is upwards of four inches in length; the neck and back are covered with white and yellow feathers; and the whole body is black, except that the back, the head, and the lower parts of the belly, have a greyiſh caſt. There is another ſpecies of the Curicaca, but diſtinguiſhable from the former only by the ſmallneſs of it's ſize.

CURIMATA. A name given by ſome authors to the lavaretus.

CURLEW. A ſea-fowl, called alſo arquata and numenius, which frequents the coaſts during the winter ſeaſon; and retires, at the approach of ſpring, to the mountains, for the purpoſe of fecundation.

The Curlew weighs about twenty-ſeven ounces; it's length, from the top of the bill to the end of the claws, is twenty-nine inches, but to the end of the tail only twenty-three inches and a half; the expanſion of the wings is three feet four inches; the bill is near ſix inches long, a little crooked, and of a dark brown colour; the tongue is ſhort; the legs are long, bare, and of a duſky hue; and there is a thick membrane which reaches to the firſt joint. The colour is diverſified with aſh and black; and the fleſh is eſteemed very delicate by ſome, while others conſider it as rank and fiſhy.

CURLEW, LESSER. This ſpecies, which is ſometimes called the whimbrel, reſembles the former in every generic circumſtance except it's ſize. It's length, from the tip of the bill to the extremity of the tail, is ſeventeen inches; and it's greateſt expanſion is thirty-three inches and a half. It's bill is three inches long; and it's weight is twelve ounces. The top of the head is of a dark brown colour, without any ſpots; the back, as far as it is covered with the wings, is white, in which circumſtance it differs from the common Curlew; and the legs are greeniſh.

CURLEW, LITTLE. The bill of this bird is black; the neck and belly are grey; the wings, which are mottled with white and brown, have three large black feathers on each; and the feet, below the knees, are of a dun aſh-colour.

CURLEW, STONE. The bill of this bird is ſtraight, two inches long, black towards the noſtrils, and yellow at the point; and the expanſion of the wings is three feet. Under each of the eyes, which are yellow, there is a bare ſpace, of a yellowiſh green. The breaſt, thighs, and chin, are a yellowiſh white; the middle of the back, the head, and the neck, are black, marginated with a reddiſh aſh-colour; on the quill-feathers there are tranſverſe white ſpots; and ſome of the wing-feathers, which are tipped with white, exhibit a very beautiful mottled appearance. The tail, which is about ſix inches long, is variegated like the wings; the legs are long, and of a yellowiſh colour; and the claws are ſmall and black. This bird has no hind-toe; and thoſe before are united by a ſmall membrane. It is a native of ſeveral Engliſh counties, particularly Norfolk; and is remarkable for it's piercing, ſhrill note, which it puts forth in the evening. It lays two eggs of a copper colour; it feeds on worms and caterpillars; and it's fleſh is very delicious.

CURLEW, BROWN, OF SONNERAT. This ſpecies is about the ſize of the European Curlew. The plumage is of a reddiſh brown; the eyes are ſurrounded with a naked greeniſh ſkin; the bill is likewiſe of a greeniſh hue; the feet are red; and the irides are of a lively ſcarlet colour. It is a native of the iſle of Luçon.

CURLEW, SPECKLED, OF SONNERAT. This curious bird is conſiderably larger than the common Curlew. The top of the head is black; the head, neck, and breaſt, are white, beautifully marked with longitudinal white bars; the belly is adorned with tranſverſe and ſemicircular black bars; the leſſer coverts of the wings and the back are of an umbre colour, having ſeveral white ſpots on their margins; the larger coverts of the wings are wholly black; and the tail is a pale grey, cut by black tranſverſal lines. This ſpecies likewiſe inhabits the iſle of Luçon.

CURTILLA. An appellation given by ſome naturaliſts to the corvus ſylvaticus of Geſner.

CURVATAPINIMA. A name ſometimes given to the fiſh more uſually known under that of bonito.

CURUCUI. A bird of the wood-pecker kind, found in Brazil. The bill is ſhort, broad, and of a ſulphur colour; the irides are of a golden hue; and the legs, which are ſhort, are covered with feathers almoſt to the feet. The whole breaſt and lower belly are of a beautiful red; the upper part of the back and the tail are of a ſhining green, with a varying gloſs; the edges of the tail are black; and the feathers underneath are white, elegantly

gantly ſtriped tranſverſely with black; and the wings are of various colours, green at their beginnings, whitiſh in their centres, and blackiſh at their extremities.

CURUCUI, SPOTTED. This bird is of the ſize of the nut-hatch; the bill is brown; the crown of the head is a deep green; the neck, breaſt, and belly, are a pale brown barred with duſky; the edges of the wings are white; the coverts and ſecondaries are green tipped with white; and the tail is duſky, barred with white. This little animal is a native of the iſle of Ceylon.

CURVICAUDA. A ſpecies of bee-fly very common in England, extremely troubleſome to horſes, and vulgarly known by the name of wriggle-tail.

CURURUCA. An American freſh-water fiſh of an oblong figure. It grows to the length of a foot and a half, has a remarkably large mouth, and it's fleſh is eſteemed agreeable food.

CUSHEW-BIRD. This bird ſo greatly reſembles the curaſſow, that ſome naturaliſts have entertained an opinion that they are of the ſame ſpecies. The Cuſhew-Bird derives it's name from the knob over it's bill, in ſhape like the American Cuſhew-nut; which knob, together with the baſis of the upper mandible, are of a fine blue colour; the reſt of the bill is red; and the eyes have reddiſh brown irides. The whole upper part is a deep gloſſy black, reflecting different hues, according to the poſition of the bird and the rays of light falling on the eyes of the ſpectator. The lower part of the belly, the covert-feathers under the tail, and the tips of the tail-feathers, are white; and the legs and feet are covered with a ſcaly ſkin of a dark fleſh-colour. The Cuſhew-Bird appears to be the ſame with the pauxi of Nieremberg.

CUSI. The Philippine name of a very ſmall and beautiful ſpecies of parrot.

CUTHBERT DUCK. A particular ſpecies of aquatic fowl.

CUTTLE-FISH. A genus of ſea inſects of the gymnarthria kind, called alſo the Ink-fiſh.

The Cuttle-Fiſh, which is of an oblong ſhape, is about ſix inches in length, and three and a half in breadth. The body is ſomewhat oval; but it is broadeſt near the head, and grows ſmaller towards the extremity, where it is obtuſely pointed. The back is covered with a ſhell as large as a man's hand, about an inch thick in the middle, but more ſlender on the ſides: this ſhell, which is hard above, but very ſpungy and brittle below, is of a whitiſh colour, and is uſed for a variety of well-known purpoſes. Under the throat there is a veſſel or bladder containing a fluid blacker than ink, which the Cuttle-Fiſh, when purſued by it's enemies, ejects in conſiderable quantities; and this darkening the water all around, enables the animal to eſcape with facility. There are two ſorts of legs joined to the head of this fiſh, which aſſiſt it in ſwimming, and conveying it's food to it's mouth; the two ſhorteſt, which are in the middle, are ſerrated on their inſides; next to them there are two long ones, one on each ſide; and the ſix remaining ones are of a pyramidal figure, and generally turned backwards. This animal, which feeds on ſmall fiſh, is found on many of the European ſhores, particularly the Mediterranean; and it's fleſh is eſteemed ſalubrious and pleaſant.

The bone of the Cuttle-Fiſh is rough and abſterſive, and chiefly uſed in medicine as a dentifrice: it is hard on one ſide; but ſo very ſoft on the other, as to receive neat impreſſions from medals, and to ſerve as a mould for caſting metals, which thus take the figure of the original; and it is alſo uſed in the poliſhing and cleaning of ſilver.

CUT-WATER. This bird, which is deſcribed by Cateſby as a ſpecies of gull, is black from the middle of the head to the tail; but the legs, and part of the bill, are red. The bill is very irregular, the under mandible being nearly two inches longer than the upper; and it is almoſt as ſtrong and ſharp as the blade of a caſe-knife.

CYCLOPTERUS. A genus of branchioſtegious fiſhes; the diſtinguiſhing characters of which are, that the branchioſtege membrane on each ſide contains ſix ſmall cylindric bones; that the body is of an oblong, globoſe figure; that the belly-fins unite at their extremities, ſo as to form one regular fin of the ſhape of a funnel; and that the fins are ſix in number. The only ſpecies yet diſcovered of this curious genus is the ſea-owl.

The above appellation is derived from Kuklos, a Circle; and Pteron, a Wing. In the Linnæan ſyſtem, this conſtitutes a genus of the nantes amphibia.

CYGNUS CUCULLATUS. A name improperly given by ſome naturaliſts to the dodo, a very large bird approaching to the caſſowary kind, but weaker in the legs and neck.

CYLINDRUS. A genus of ſhell-fiſh of which there are many very elegant and valuable ſpecies. This genus, however, is more uſually known at preſent under the name of rhombus; though with leſs propriety, as the word Cylindrus very aptly expreſſes the ſhape of the ſhell, which is cylindric and oblong; while the rhombus refers to a lozenge, which by no means conveys any idea of the real figure.

The ſhells of this genus are univalve, of an oblong, cylindric figure, having oblong mouths, and frequently the clavicles ſeparated from the bodies by circles; and the columella is in ſome ſpecies ſmooth, and in others rough. But the moſt obvious diſtinction of this genus, without having recourſe to the formation of the mouth, is, that in all the ſpecies, both ends of the ſhell are nearly of the ſame ſize, though the tail-part is certainly ſomewhat ſmaller than the head. The head is not ſeparated from the body by an elevated rib, as in the volutæ, but follows the ſhape of the body, though ſometimes it is divided by a dentated furrow; and in ſome, but very few ſpecies, by a prominent circle. This character, which brings the Cylindri nearly in alliance with the volutæ, renders the diſtinction the more difficult; but, in this caſe, the extremity of the ſhell muſt be regarded, which in the Cylindrus is always obtuſe, and in the voluta as invariably pointed. The family of the Cylindri are very numerous.

CYMBIUM. An appellation given by many conchologiſts to a kind of ſea-ſhell, called alſo the gondola ſhell. It is a genus of the concha globoſa, or dolium, and comprehends ſeveral ſpecies.

CYNIPS. A genus of four-winged inſects of the hymenoptera kind, having a ſpiral ſting which is generally concealed, and being deſtitute of a proboſcis.

CYNOCEPHALUS. A name given by ſome naturaliſts to an animal of the monkey kind, the magot of Buffon. It has no tail, but only a ſmall protuberance at the place of inſertion. The face, which is prominent, bears ſome reſemblance to that of the dog; the body is covered with a browniſh hair,

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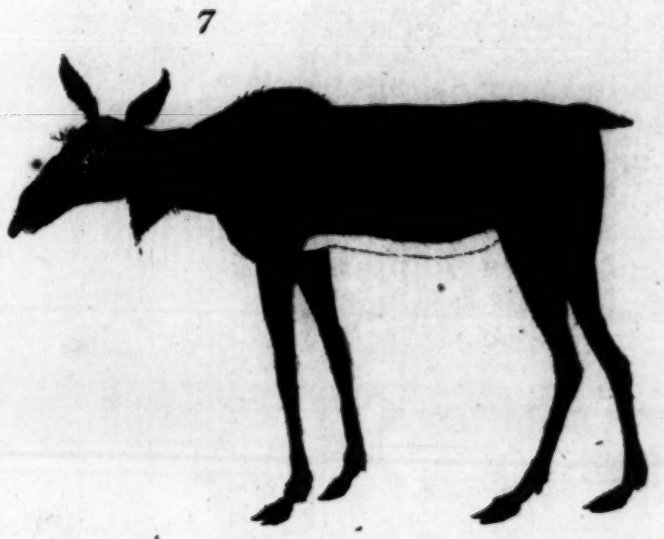

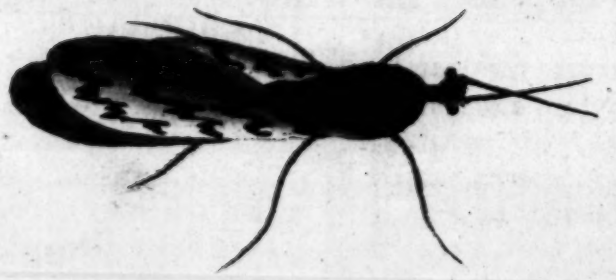

1. SMEAR - DAB. 2. BLACK AND YELLOW DAW. 3. BLUE AND GREEN DAW. 4. SURINAM DAW. 5. ROCK DAY - FLY. 6. WHITE - WINGED DAY - FLY. 7. FEMALE MOOSE DEER. 8. REIN - DEER.

Plate XXXVII. Published as the Act directs by Harrison & Co. July 2. 1781

hair, except on the belly, where it is yellowiſh; and the rump is large, callous, and red. This animal grows to the height of three or four feet, and is a native of moſt parts of Africa and the Eaſt.

CYNOGLOSSUS. A fiſh common in the Mediterranean ſeas. It very much reſembles the ſoal, but it's fleſh is neither ſo delicate nor ſo well-flavoured.

CYNOGLUCOS. An appellation given by the ancients to an animal partaking of the ſhape both of the dog and the wolf, and ſuppoſed to be generated between theſe two creatures.

CYNOMUIA. The claſſical name of the dog-fly. See Dog-Fly.

CYPRÆA. A genus of univalves, called alſo porcellana, or cowries; and ſometimes venerea, from their being peculiarly dedicated to Venus, who was ſaid to have endowed a ſhell of this kind with the powers of a remora, ſo as to impede the courſe of the ſhip which was ſent by Periander, the tyrant of Corinth, with orders for the caſtration of the young nobility of Corcyra.

Shells of the Cypræa genus are generally ſemi-oval, having their mouths placed in their flat part; their ſpires are not externally viſible, the revolutions being performed within the body of the ſhell; the aperture, or mouth, is a narrow opening, or vent, running the entire length of the ſhell; the lips, which are near each other, are broad, turning inwards, and ſerrated; and the two ends or extremes on the upper-part are very prominent. At one extreme there appears a wry gutter, or opening, like the mouth of a ſoal; the other extreme has alſo a gutter, but perpendicularly placed; and near it, in ſome ſpecies, there is another protuberance, formed like a ſmall rude clavicle or turban.

Theſe ſhells are extremely numerous; and moſt of the ſpecies are very beautifully coloured and poliſhed, which embelliſhments they receive from nature altogether unaſſiſted by art. They are generally found round the ſhores of iſlands, in their recent or living ſtate, in almoſt every country of the world.

CYPRIANUS. An Ariſtotelian appellation for the carp.

CYPRINUS. A very extenſive genus of fiſhes, in the Artedian ſyſtem; the characters of which are theſe: the branchioſtege membrane on each ſide contains three bones; the whole mouth is ſmooth, and deſtitute of teeth; but, pretty low in the jaws, there are two hard and ſerrated bones, which ſupply the place of teeth, and oppoſite to theſe there is a ſoft oval bone correſponding with them; and the air-bladder, which appears as if tied in the middle, is thus divided into two parts.

This fiſh is of the malacopterygious kind; and the two jaws are uſually of the ſame length, but ſometimes the lower one is the longeſt. Of this genus are the barbel, bleak, bream, carp, chub, gudgeon, roach, and tench. In the Linnæan ſyſtem, this is a genus of abdominales.

CYPRINUS LATUS. A name given by many authors to the common bream.

CYPRUS BIRD. A common name for the atricapilla, or black cap; a ſmall bird very common in the iſle of Cyprus, and not unuſual in England. See Black Cap.

D.

DAB. A ſmall fiſh of the pleuronectes kind, in the Linnæan ſyſtem, called by ſome naturaliſts paſſer aſper and limanda.

The Dab-fiſh, which is flat, and ſuperior in flavour to the common plaiſe, though inferior in ſize, is covered with ſmall ſcales, very rough at their extremities, as if ſerrated; and the eyes, which are placed on the right ſide, are very near each other. It is generally of an uniform brown colour on the upper ſide, though ſometimes ſhaded with a darker; the lower ſide is white; and the lateral line is very much incurvated at the beginning, but afterwards proceeds ſtraight to the tail. This fiſh, which is ſuppoſed to be in it's higheſt perfection during the months of February, March, and April, ſpawns in May and June, and remains flabby and watery during the reſt of the ſeaſon.

Dab, Smear. This fiſh reſembles the former, and it's fleſh is equally delicious. It grows to about a foot and a half in length, and at the wideſt part meaſures about eleven inches between fin and fin. The head is very ſmall; the eyes are placed pretty near each other; and the mouth is full of ſmall teeth. The dorſal fin, which riſes near the mouth, and extends within a ſhort ſpace of the tail, conſiſts of ſeventy-nine rays; the lateral line is much incurvated for the two firſt inches from it's origin, and then proceeds ſtraight to the tail; the back is covered with ſmall ſmooth ſcales of a light brown colour, ſpotted obſcurely with yellow; and the belly is white, and marked with five large duſky ſpots.

DABUAH. An Arabian appellation for the hyæna.

DACE, or DARE. The cyprinus leuciſcus of Linnæus. This fiſh reſembles the chub in it's ſhape; but is ſmaller and whiter, and has a leſs head in proportion to it's body. Like the roach, it is gregarious; frequents the ſame places; breeds prodigiouſly; and is extremely vivacious, ſporting with it's companions during the ſummer ſeaſon near the ſurface of the water in a very frolickſome manner. The head of this fiſh is ſmall; the irides are of a pale yellow colour; and the body is ſlender, and ſeldom exceeds ten inches in length, though ſome naturaliſts make mention of one which weighed a pound and a half. Like the reſt of the leather-mouthed fiſhes, it has no teeth in it's jaws, but only in it's throat; the back is duſky, with a caſt of yellowiſh green; the ſides and belly are ſilvery; the dorſal fin is duſky; the ventral, anal, and caudal fins, are red; and the tail is extremely forked.

The Dace is in the higheſt ſeaſon during the months of April and May; but, being rather coarſe and inſipid, it is very little eſteemed. However, it affords the expert angler great diverſion; for it will bite at any fly, though it is particularly fond of the ſtone caddis, or May-fly. Indeed, in warm weather, this fiſh ſeldom refuſes a fly at the ſurface of the ſtream; but, during the cold months, the bait

muſt be ſunk within three inches of the bottom. The winter-fiſhing for Dace requires very different baits; namely, thoſe white, red-headed maggots, uſually found in great numbers in ploughed lands, and which, if depoſited among freſh earth, may be preſerved many months for that purpoſe.

Dace are extremely vivacious; and, when immerſed in water, will live a conſiderable time, provided that element is frequently changed. They are ſaid to ſubſiſt on the animalcula found in the water; and, in time, to become extremely tame.

DACOLYTHUS. An appellation given by many authors to a ſmall fiſh, a ſpecies of the loach, diſtinguiſhed by Ray under the name of cobitis barbatula aculeata. It ſeldom exceeds two, or at moſt three, inches in length; the head is broader and flatter than the reſt of the body; the back is of a duſky brown colour, ſpotted with black; and the belly is yellow. There are two beards on each ſide of the upper-jaw; and on the coverings of the gills, on both ſides, there are two prickles, or a double-pointed ſharp hook, by means of which the Dacolythus moves about among the ſtones. This fiſh, which is very partial to ſhallow waters with ſtony bottoms, ſpawns in May and June.

There is another ſpecies of this fiſh, diſtinguiſhed from the preceding by having ten beards at it's mouth: and a notion prevails among the vulgar, that it ſwallows little ſtones; hence it's German appellation ſignifies Stone-ſwallower, or Stone-biter.

DACTYL. A name frequently given to the ſolen, or razor-fiſh, ſuppoſed to be the Dactylus of Pliny, and to which that naturaliſt aſcribes a luminous quality in the dark. Reaumur, however, aſſerts, that the common ſoal or razor-fiſh poſſeſſes no ſuch quality; but that the pholas, or, as the French call it, the dail, certainly does; and therefore concludes, that the pholas is either the Dactylus of Pliny, or that this author has attributed to one ſpecies of fiſh what is the peculiar property of another.

The ſhell of the Dactyl, or pholas, is by no means luminous, but only it's body and juices; and in this reſpect it bears no affinity to ſome kinds of fiſh which are known to poſſeſs the quality of ſhining in the dark, ſince theſe never exhibit a luminous appearance till they are in a ſtate of decay, and partly putrid; whereas thoſe retain their reſplendent quality at all times. The glow-worm is only partially luminous; but the pholas is entirely ſo; and, when diveſted of it's ſhell, and depoſited in any dark place, every part of it's ſurface emits a very lively light. Nor is that light peculiar to the external ſurface of this fiſh, but common to the whole body; for, when wounded either tranſverſely or longitudinally, the mangled parts appear equally luminous with the other ſurfaces. The Dactyl is therefore a genuine, natural phoſphorus; and, like the artificial one of urine, renders every object luminous by friction.

Reaumur has remarked of this fiſh, that, when freſh caught, it abounds with water, which naturally drops away on being handled; and, according to Pliny's juſt obſervation, theſe very drops are luminous. However, the light which the Dactyl communicates to bodies coming in contact with it, is not permanent, but continues only while they are wet. Reaumur obſerved that the light on his fingers grew fainter and fainter by degrees as they dried; and that, on dipping them in water, it brightened up again. By this circumſtance, he was encouraged to attempt ſome mode of preſerving this fiſh, ſo as to make it an occaſional phoſphorus, but the experiment did not coincide with his wiſhes.

In the ſummer months Dactyls may be kept freſh for ſeveral days, during which they will retain their luminous quality; but, as they begin to decay, they gradually loſe their luſtre: and it alſo appears that, if dead ones are intermixed with living, the latter will loſe their luminous quality even in their beſt ſtate.

It is well known that all the ſpecies of the pholæ live in holes in ſtones and other ſubſtances, where they have no egreſs; and Reaumur having cauſed ſome of theſe ſtones to be taken up, (in which, on breaking them, there appeared ſome dead fiſh, and ſome living ones) diſcovered, that the living animals contained in them did not poſſeſs their luminous property, but that it ſeemed to be extinguiſhed by having been in contact with ſuch of the pholæ as were dead and putrid.

DAGYSA. A marine animal found within twenty leagues of the coaſt of Spain, and firſt noticed by Sir Joſeph Banks and Dr. Solander, who gave the name of Dagyſa to this new genus of marine animals becauſe of the reſemblance which one ſpecies of them bore to a gem. This creature, which was of an angular figure, about three inches long and one thick, had a perforation quite through it, and a brown ſpot at one extremity, which theſe gentlemen conjectured to be the ſtomach. Four of theſe animals, when firſt taken, adhered together by their ſides, and appeared to be only one; but, on being put into a glaſs of water, they ſoon ſeparated, and ſwam about. Several ſpecimens of them were afterwards caught ſticking together, ſometimes to the length of a yard or more; and, when in the water, exhibiting very beautiful colours.

DAKER HEN. The Engliſh name for the ortygometra, a bird of the gallinaceous kind ſomewhat reſembling the quail. It weighs about four ounces and a half; it's length, from the tip of the bill to the end of the claws, is fifteen inches, and to the end of the tail eleven inches and a half; the expanſion of the wings is nine inches; the body is narrow, or compreſſed ſideways like that of the water-hen; the breaſt and belly are white; on the head there are two broad black lines; and there is likewiſe a white one which runs from the ſcapulars, as in the moor-hen. The back is black, with an admixture of reddiſh aſh-colour; and the leſſer coverts of the wings, as well as the borders of the prime-feathers, are of a deep yellow. The tail is two inches long; the bill is of a moderate ſize; and the legs and feet, which are long, are between a ſaffron and a green colour.

The Daker Hen reſembles the quail in many reſpects, and is ſaid to aſſociate with one ſpecies of quails. During the ſpring, it frequents cornfields, and puts forth a croaking call very peculiar to itſelf, which fowlers ſometimes imitate with much ſucceſs. It is very common in Ireland and Scotland; and is ſometimes ſeen in the northern counties of England, where it is known under various appellations.

DAMIER. A name given by French naturaliſts to that elegant ſpecies of voluta, the ſpots of which are placed in a chequered order, reſembling the marks of a draught or cheſs-board.

DANCER. An appellation ſometimes given to a ſpecies of the dog.

DANGCANGHAC. The Philippine name for

for the ardea, or heron. The Spaniards call it gazza; and it appears to be the ſame ſpecies with the common heron.

DANISH DOG. An animal which, as to it's ſhape, ſeems to be a compound of the maſtiff and the grey-hound, being more ſlender than the one, and much ſtronger than the other. It is the talleſt dog generally bred in England, but is more ſhewy than ſerviceable. See Dog.

DARE. A provincial name for the dace.

DART, ACONTIAS. An animal of the ſerpent kind, ſo called from it's ſhooting itſelf forward like a dart. It is of a whitiſh aſh-colour; the belly is entirely white; and on the back there appears a number of black ſpots. The neck is black, and from thence run two white lines along the back to the tail; and the black ſpots, which are ſmall, are all encircled with rings of white. Travellers affirm, that ſerpents of this kind lodge in trees, from whence they ſuddenly dart on ſuch perſons as caſually paſs within their reach; and that their bites prove mortal. They are found in Egypt, Lybia, and the Mediterranean iſlands. See Acontias.

Dart of Amboyna. This reptile, which is about ſix feet long, and as thick as a man's arm, is covered with ſcales of a reddiſh brown colour, except on the back and ſides, where they have an azure hue. The head is of a moderate ſize; the eyes are large and bright; the teeth are ſmall; and the tail is long and pointed.

DASYPUS. The Daſypus forms a genus of brutes of the claſs of mammalia, in the Linnæan ſyſtem. This genus has many grinding, but no cutting or canine teeth. The ſeveral varieties are diſtinguiſhed by the number of bands encompaſſing them, and which reach from the back to the edges of the belly. Accordingly, Linnæus enumerates the ſingle-banded, the three-banded, the four, ſix, ſeven, and nine-banded Daſypus. See Armadillo, and Tatu.

DAUPHIN. A ſpecies of ſhell-fiſh of the cochlææ lunares genus, or round-mouthed ſnails; ornamented with rows of indented eminences on all the revolutions of the ſhell.

DAW, JACK, or COMMON DAW. This bird is leſs than the crow. From the hind-part of the head to the middle of the neck, it is of an aſh-colour; the breaſt and belly are ſomewhat of the ſame hue; but the reſt of the body is black, with a blueiſh gloſs. The head is pretty large; which circumſtance, according to Willughby, indicates this bird to be ingenious and crafty. The irides are white; the forehead, the bill, and the feet, are black; and the claws are very ſtrong and hooked. The bill is an inch and a quarter in length; and the tongue is cloven at the end. It weighs nine ounces and a half; from the tip of the bill to the extremity of the tail, it meaſures thirteen inches and a half; and the expanſion of the wings is twenty-eight inches. The female lays five or ſix eggs, which are leſs pale and ſpotted than thoſe of the crow. It breeds in many European countries; and delights to lodge about old towers, caſtles, church-ſpires, and ſtone walls, eſpecially ſuch as are deſolate or ruinous. In ſome parts of Hampſhire, it makes it's neſt in rabbit-holes; but it very ſeldom inhabits trees.

The Jack-Daw is very docile and loquacious; it is a gregarious fowl; it feeds on nuts, fruits, grain, and inſects; but it's fleſh is not deemed proper food.

Daw, Purple. According to Cateſby, this bird is of a purple colour; the bill is black; the tail is longer than that of the common Jack-Daw; and the middle feather conſiderably longer than the reſt. The purple hue of this fowl is ſo very deep that, at a diſtance, it appears as if entirely black; but the hen is of a brown colour.

Daw, Black and Yellow, of Brazil. This bird is about the ſize of the common Daw. The bill, which is yellow, is a little incurvated at the point, pretty ſharp, and ſmooth on the ſurface; the plumage is black, with a ſlight gloſs of purple, except a ſpot of bright yellow on the covert-feathers of each wing; and the lower half of the back, the covert-feathers both above and beneath the tail, and the bottoms of the tail-feathers, are alſo of a fine golden yellow. The wings are internally black; and both the black and yellow parts of this bird have their downy feathers at the bottoms very white. The tail conſiſts of twelve feathers; the legs and claws are ſtrong, and covered with black ſcales; and the exterior and middle toes adhere a little at their bottoms. According to Marcgrave, the eyes of this fowl are of a ſapphirine colour.

Daw, Blue and Green. This beautiful bird is ſaid to be a native of the iſle of Ceylon. The bill, which is black, is a little arched, and has an angle on each ſide of the upper mandible near the point; the whole head, the neck, the under-ſide to the tail, the lower part of the back, and the tail, are entirely of a moſt delightful blue, ſhaded with a caſt of purple, and having a bright ſhining ſurface like poliſhed metal; the leſſer coverts of the wings, both above and below, are of the ſame ſhining blue colour; the middle of the back, the quills, and the two rows of coverts above them, are a moſt ſplendid green reflecting gloſſes like burniſhed gold; the covert-feathers have black tips, forming two rows acroſs each wing; the inſides of the quills, and the under-ſide of the tail, are a duſky black; the tips of the tail-feathers, and the middle of the belly between the legs, have the blue feathers tinctured with green; the legs, feet, and claws, are pretty ſtrong in proportion, and covered with black ſcales; and the exterior toes adhere a little, at their bottoms, to the middle ones. This ſpecies was firſt deſcribed by Edwards.

Daw, Surinam. This bird is about the ſize of the common crow; the top of the head is of a deep green colour; the hind-part is marked with a fine blue, and beneath that with pale green. Under each ear, and on the hind-part of the neck, there are ſpots of a greeniſh colour; the neck, breaſt, belly, back, and coverts of the wings, are a varying green; the primaries are duſky, terminating in blue; the tail is blackiſh; and the legs are of a fleſh-colour.

DAY-FLY. An inoffenſive race of inſects, which paſs their very limited ſtate of being as the prey of numerous enemies, whoſe injuries nature has not fitted them either to retort or avoid. They live near thoſe waters in which they breed; and, in their winged ſtate, enjoy ſuch a ſhort exiſtence, as to have afforded ſcope for the reflections of the naturaliſt, and emblems for the moraliſt.

The term Day-Fly originates from theſe inſects living in that ſtate only one day; but, with reſpect to many of the ſpecies, even that period is circumſcribed.

That particular claſs which ſome naturaliſts deſcribe under the name of phryganea, never burſts from it's reptile ſtate till about ſix in a ſummer's evening;

evening; and, before the ſun riſes next morning, it is no more. Five hours generally compleat it's contracted ſpan of life; during which, if it is fortunate enough to eſcape the fiſhes, the dragon-flies, and the reed-ſparrows, it depoſits it's impregnated eggs in the waters, and dies before the midnight cold. The worm, however, which is hatched from the egg of this fly, lives and feeds at eaſe in the waters, enjoying a much longer exiſtence, and that in more ſecurity; for it covers it's tender frame with a motley caſe of it's own conſtructing; and lives, unſuſpected and unſeen, for one, and ſometimes nearly two years.

The Day-Fly has an oblong mouth; it is deſtitute both of teeth and feelers; there are two large ſtuds on the head, exactly above the eyes; the wings, which are carried ſtanding upwards, are unequal in ſize; and the tail has briſtles projecting from it.

Day-Fly, White-Winged. Inſects of this ſpecies fly with great velocity: they abound near running waters during the months of June and July, ſupplying multitudes of fiſhes with food, which eagerly watch them while depoſiting their eggs; and no ſooner do they propagate their kind, than they pay their ranſom with their lives. The antlers of the Day-Fly have a multitude of knotted joints, which grow ſmaller towards their points; the briſtles of the tail are hard and firm; the head is of a duſky brown colour; the eyes are green; the ſtuds above the eyes are a jetty black and lucid; the mouth forms a kind of amber-coloured beak; the trunk is a tawny brown, with a brighter ſpot in the centre; the body is a dull brown with pale rings; the legs are a greyiſh or aſh-colour; the tail is a pale brown; and the briſtles are ruddy.

Day-Fly, Rock. For the hiſtory of this fly, which is particularly curious, we are indebted to the late ingenious Dr. Hill, who informs us, that he became acquainted with this little inſect in the following very ſingular manner. Having obſerved ſeveral oblong, greyiſh tubes or caſes, running in various directions on a ſtone obeliſk erected before a certain houſe in London, he was inclined to ſuppoſe that they were tubuli, or caſes of ſea-worms, petrified; but finding that this obeliſk carried evident marks of the chiſſel, and that the little tubules were wrought over them, he directed ſome to be picked off, but found them as hard as the reſt of the ſtone, and affixed to it with great ſolidity. However, by the aſſiſtance of a hammer, a few of them were diſengaged; but they exhibited nothing ſhelly in them, being mere ſtony tubes, formed of the ſubſtance of the obeliſk in ſmall granules cemented cloſe.

Thus, as the Doctor informs us, the matter reſted for ſome time; but his curioſity being awakened by the ſingularity of the incident, he examined large maſſes of ſtone wherever they preſented themſelves; and, happening to paſs into Buckinghamſhire in the month of July, he there found means to unravel the whole myſtery.

Several large ſtones, partly immerſed in water, were, in thoſe parts of them which remained dry, covered with grey ſtony tubules, of the ſame kind as he had formerly obſerved on the obeliſk; and, in the ſpace of one evening, he diſcovered more than fifty flies about one maſs, which evidently owed their origin to the worms encloſed in the tubules. Theſe flies are very beautiful creatures, and ſomewhat reſemble the phryganea in the ſhortneſs of their duration, as well as in various other particulars. The Doctor obſerved the females buſied in depoſiting their eggs in all the viſible cracks and crevices of the ſtones, where the worms form tubules for themſelves, and probably live in that ſtate for one, or even two years.

The head of this fly is hoary, and of a fine green colour, with a black round ſpot on it's centre ſhining at the top; the eyes are a deep black; the ſtuds are brown; the antlers are long, projecting ſtraight forwards, and uſually croſſed; the mouth is duſky; the trunk, which is a lively green, is united to the body by a kind of neck of a gloſſy green; the back is beautifully variegated with ſtreaks and dots of gold; and the ſcutcheon is of a lighter green. The body is thick, and green; the legs are a pale brown; the wings are a pearly grey, elegantly veined and clouded with a pale blue and a light brown; and the briſtles are of an amber colour.

DEATH-WATCH. The Engliſh name of the pediculus, or wood-louſe, a ſpecies of termes belonging to the order of aptera, and claſs of inſects, in the Linnæan ſyſtem. It is nearly of the ſize of the common louſe; and it appears that the ticking noiſe commonly heard, proceeds either from the male or female, and is expreſſive of their amorous dalliance. This ſound hath long been conſidered by weak minds as a preſage of death in thoſe families where it is heard; and hence this inſect is alſo called pediculus fatidicus, mortiſaga, and pulſatorius.

There are two ſpecies of Death-Watches; one of which is aptly deſcribed by Mr. Allen, in the Philoſophical Tranſactions. According to this gentleman, it is a very ſmall beetle, five-ſixteenths of an inch in length, of a dark ſpotted brown colour, and having pellucid wings under the vaginæ, a large cap or helmet on the head, and two antennæ proceeding from beneath the eyes; and the part with which it beats is the extreme edge of the face, which he calls the upper lip; the mouth being protracted by this bony part, and lying underneath entirely out of ſight.

The above account is confirmed by the celebrated Dr. Derham; with this variation only, that inſtead of ſtriking with the upper-lip, he obſerved that the animal drew back it's mouth, and beat with it's forehead. This ingenious naturaliſt is ſaid to have preſerved a male and a female in a box for ſeveral months, and to have induced one or other of them to beat, whenever he thought proper, by a nice imitation of it's noiſe; and, by this ticking ſound, to have repeatedly excited the male to an amorous connection with the female.

The ſecond ſpecies of Death-Watch is an inſect apparently very different from the firſt. The former gives only ſeven or eight ſtrokes at a time, and very quick; but the latter often beats for ſeveral hours together without any intermiſſion, and it's pulſations very much reſemble the ticking of a watch. This laſt, which is a ſmall grey inſect, when viewed with the naked eye, appears like a louſe, and originates from a minute white egg conſiderably ſmaller than the nit of that animal. In March, the inſect is hatched, and creeps about dragging it's ſhell after it. When it firſt quits it's covering, it is even ſmaller than it's egg, though that is ſcarcely diſcernible without a microſcope. In this ſtate it is ſomewhat like the mite found in cheeſe; and, from this diminutive condition, it gradually attains to maturity.

DECACTIS. An appellation given by ſome naturaliſts to a kind of ſtar-fiſh of the branched or

aſtrophyte kind, having ten rays where they are firſt parted from the body, each of which is repeatedly ramified.

DEER. A numerous genus of animals of the order of pecora in the Linnæan ſyſtem; the diſtinguiſhing characters of which are, that the horns are deciduous every year, ſolid, and ramified; and that there are eight cutting teeth in the lower-jaw, and none in the upper.

If we compare the internal ſtructure of the bull and the ſtag, we ſhall find a ſtriking ſimilitude between them; though, in ſhape and form, no two animals can be more diſſimilar. Though one of thoſe creatures is among the ſwifteſt, and the other the heavieſt, of the creation, the following are the ſlight internal diſtinctions between them: all the Deer kind are deſtitute of a gall-bladder; their ſpleen is proportionably larger; and their kidneys are differently formed.

Deer compoſe ſome of thoſe innocent and peaceable animals which embelliſh the foreſts and animate the ſolitudes of nature. The eaſy elegance of their form, the lightneſs of their motions, and thoſe large branches which ſeem rather intended to ornament their heads than to contribute to their powers of defence, their magnitude, their ſtrength, and their fleetneſs, all conſpire to rank them among the firſt of quadrupeds, and the moſt worthy objects of human curioſity.

DEER, STAG. The Stag, or Hart, the female of which is called a Hind, and the young a Calf, differs, both in it's magnitude and in the conformation of it's horns, from the Fallow-Deer. The Stag is much larger; and his horns are round; while thoſe of the fallow kind are broad and palmated. The firſt year, the Stag has properly no horns, but only a kind of corneous excreſcence, ſhort, rough, and covered with a thin hairy ſkin; the ſecond year, the horns are ſingle and ſtraight; the third year, they have two antlers; the fourth, three; the fifth, four; and the ſixth, five. The animal's age, however, cannot always be known with certainty by theſe indications, for ſometimes they are more, and frequently leſs. When arrived at the ſixth year, the antlers do not always increaſe; and though the number may amount to ſix or ſeven on each ſide, the Stag's age is then eſtimated rather from their ſize, and the thickneſs of the branch which ſuſtains them, than from their number.

Theſe horns, notwithſtanding their magnitude, are ſhed annually, and ſucceeded by new ones. Of the old horns, which are of a ſolid, firm texture, handles for knives, and other domeſtic utenſils, are uſually made; but, while young, nothing can be more tender or ſoft: and the creature, as if conſcious of it's imbecility, after ſhedding it's former horns, inſtantly retires from the reſt of the herd, and, hiding itſelf in ſolitudes and thickets, never ventures abroad for the ſake of paſture, but in the night ſeaſon. During this interval, which uſually happens about the latter end of February or the beginning of March, the new horns occaſion a very conſiderable degree of pain to the poor Stag, and have a keen ſenſibility of any external impreſſion; at which time alſo the flies are very troubleſome to the animal, who on that account appears diſconſolate and dejected.

When the old horns are ſhed, the new ones do not immediately begin to appear; but the bones of the ſkull are then inveſted only with a tranſparent perioſteum, or ſkin; which, according to anatomiſts, covers the bones of all animals indiſcriminately. This ſkin, however, ſoon becomes tumid, and forms an excreſcence containing a conſiderable quantity of blood, and which gradually appears covered with a downy ſubſtance ſoft as velvet, and nearly of the ſame colour with the reſt of the animal's hair. This tumour daily protrudes from the point like the graft of a tree; and, riſing by degrees from the head, ſhoots out the antlers on each ſide; ſo that in a few days, according to the condition of the animal, the whole head is compleated. For ſome time, however, the horns are very ſoft, and covered with a ſort of bark, which is merely a continuation of the integument of the ſkull. This bark is velveted and downy, and every where furniſhed with blood-veſſels, which ſupply the naſcent horns with nouriſhment: as they creep along the ſides of the branches, their prints are marked over the whole ſurface; and, the larger the blood-veſſels, the deeper thoſe prints appear. Hence ariſe the inequalities on the ſurfaces of the horns of the Deer kind, which we ſee furrowed all along the ſides, the impreſſions diminiſhing towards the points, where the parts are as ſmooth and ſolid as ivory. But it ſhould be remarked, that the ſubſtance of which the horns are compoſed begins to harden at the bottom, while the ſuperior part remains ſoft, and continues to grow; from whence we may rationally conclude, that the horns of Deer grow differently from thoſe of ſheep or cows, which are invariably obſerved to increaſe from their bottoms. However, when the whole head has attained it's full growth, the extremities begin to acquire their ſolidity; the velvet covering, or bark, together with the blood-veſſels, dry up, and then begin to fall; which proceſs the animal itſelf ſeems to accelerate, by rubbing it's antlers againſt every tree that it approaches: and in this manner the whole external ſurface being gradually ſtripped off, the head at laſt acquires it's compleat hardneſs, expanſion, and beauty.

To enter into a philoſophical enquiry with reſpect to the production of theſe horns, would lead to an extenſive field of doubtful argumentation: ſuffice it therefore to obſerve, that if a Stag be caſtrated when his horns are ſhed, they will never grow again; and, on the contrary, if the ſame operation be performed while the horns are in perfection, they will never fall off. If he be deprived of only one of his teſticles, he will be deſtitute of one horn on that ſide; and if one of them is only tied up, he will want the horn on the oppoſite ſide. The quantity of his proviſions will alſo tend to facilitate the growth and expanſion of his horns. Buffon aſſerts, that it is poſſible to ſtop their growth entirely by a conſiderable retrenchment of food; and, as a confirmation of this aſſertion, nothing can be more obvious than the difference between a Stag bred in a fertile paſture and undiſturbed by the hunter, and one ill fed and liable to perpetual alarms: the head of the former is expanded, his antlers are numerous, and the branches thick; whereas the latter has but few ramifications, the traces of the blood-veſſels on them are but ſlight, and their expanſion is inconſiderable. The beauty and ſize of their horns, therefore, mark the ſtrength and vigour of the animals; for ſuch of them as are ſickly, or have been wounded, never protrude that magnificent profuſion ſo much admired in the Deer kind. Thus the horns may not inaptly be aſſimilated to a vegetable production grafted on the head of the animal: like vegetables, they grow from the extremities; like vegetables, they are for ſome time covered with a nutritive

bark; and, like vegetables, they have their annual decay and reproduction. So that, by the aſſiſtance of a ſtrong imagination, we might fancy that the leafy productions on which the animal feeds once more vegetate in his horns.

It has been previouſly remarked, that Stags have no ſooner ſhed their horns, than they ſeparate from each other, and ſeek the champain parts of the country, remote from all other animals which their ſituation renders them unable to oppoſe. In this ſtate of imbecility they continue near three months, before their horns attain to their full growth and ſolidity; and then, by rubbing them againſt the branches of thickets, they at length clear them of that ſkin which had before contributed to their growth and nouriſhment. Some have roundly aſſerted, that the horns aſſume the colour of the ſap of thoſe trees againſt which they are rubbed; but this aſſertion is undoubtedly erroneous, ſince it is well known that ſuch Stags as are kept in parks where no trees grow, have a variety in the colour of their horns, which can only be aſcribed to the operations of nature.

Soon after theſe animals are furniſhed with new horns, they begin to feel the impreſſions of the rut, or the natural deſire of propagating their kind. The old ones are generally the moſt forward in this buſineſs; and accordingly, about the end of Auguſt or beginning of September, they leave the thickets, and return to the plains in queſt of hinds, whom they court with a loud tremulous voice. At ſuch ſeaſons their necks become remarkably turgid; they appear bold and furious; fly from one place to another; ſtrike with their horns againſt the trees, and every other oppoſing object; and continue reſtleſs and fierce till they have found the females, who at firſt avoid them, but are at laſt overtaken and compelled.

When two Stags are competitors for the ſame hind, how timid ſoever they may appear at other times, they now ſeem agitated with an unuſual degree of ardour: they paw up the earth, menace each other with their horns, bellow prodigiouſly, and deſperately engage, ſeemingly determined either to conquer or die. Such combat uſually continues till one of the parties is either compleatly worſted, or put to flight; and it often happens that the victor is obliged to fight ſeveral ſuch battles before he remains the undiſputed maſter of the field. On theſe occaſions, the old ones are generally the moſt ſucceſsful, as they poſſeſs a much greater degree of ſtrength and courage; and theſe alſo are by the hinds preferred to the young ones, the latter being more feeble, and leſs ardent. However, they are all equally inconſtant, confining themſelves to one female but for a few days, and then ſeeking out another, who is, perhaps, not to be enjoyed without a repetition of their former danger.

After this manner the Stag continues to range from mate to mate for about three weeks, the extent of the rutting-time; during which period, he ſcarcely either eats, ſleeps, or reſts, but continues to purſue, to combat, and to enjoy. At the termination of this ſeaſon of inſanity, (for ſuch it ſeems to be with reſpect to theſe animals) the creature, which was before very fat, ſleek, and gloſſy, becomes lean, feeble, and timid. Having performed this duty enjoined him by nature, he retires from the herd, in order to ſeek food and repoſe; he frequents the verge of his bounds; and ſelects the moſt nouriſhing paſtures, where he continues till his ſtrength is renovated. Thus is his whole life ſpent in the alternations of plenty and want, of corpulence and leanneſs, of health and ſickneſs, without having his conſtitution materially affected by the violence of ſuch tranſitions.

This animal does not arrive at a ſtate of perfection for upwards of five years, and generally lives above forty: and, indeed, it ſeems to be a pretty general rule in the animal œconomy, that every creature lives about ſeven times the number of years which it continues in a growing ſtate. What, therefore, has been reported by ſome, with reſpect to the life of this animal, has undoubtedly originated from ignorance and credulity. It has, indeed, been affirmed, that a Stag was formerly caught in France, having his neck begirt with a collar bearing this inſcription—'Cæſar hoc me donavit,' which ſome have interpreted of Julius Cæſar; but it ſhould be remembered, that Cæſar is a general name for Emperor; and therefore it is more rational to conclude, that one of the emperors of Germany (who are always ſtiled Cæſars) might have been the donor of ſuch inſcription.

However, it is certain that the Stag may differ as to the term of his life, either in reſpect of the goodneſs of his paſture, or the repoſe he may be ſuffered to enjoy; for theſe are circumſtances which not only influence his age, but alſo his ſtrength and vigour. The Stags inhabiting the plains and vallies which abound in corn and paſture, are much more corpulent, as well as tall, than ſuch as are bred on rocky waſtes or heathy mountains. The latter are low, ſmall, meagre, and incapable of running with the celerity of the former, though they are found to hold out much longer: they are alſo more artful in evading the hunters; and their horns are uſually black and ſlender, while thoſe of the lowland Stags are reddiſh and flouriſhing. So that the beauty and ſtature of theſe animals are proportioned to the richneſs of their paſture and the extent of their ſecurity.

The colour of the Engliſh Stag is generally red, or a reddiſh brown, with ſome black about the face, and a black liſt down the hinder-part of the neck, and between the ſhoulders: nevertheleſs, in other countries, the greateſt number of theſe animals is brown; a few of them, indeed, are white, but ſuch ſeem to be tinctured with a domeſtic breed. The Stag has the moſt beautiful eye of any animal that is a native of this climate; and his ſenſes of ſmelling and hearing are in no leſs perfection than that of viſion. When in the leaſt alarmed, he liſts his head, erects his ears, and ſtands for a few moments as if in a liſtening poſture. Whenever he ventures on ſome unknown ground, or quits his native covert, he makes a pauſe at the ſkirt of the plain, in order to examine every object around him; after which he turns his face againſt the wind, for the purpoſe of diſcovering by his ſcent the approach of any enemy. Should a perſon at ſome diſtance whiſtle, or call aloud, the Stag immediately ſtops ſhort in his ſlow-meaſured pace, and gazes on the intruder with a kind of aukward admiration; but, if the ſagacious animal perceives neither dogs, nor any inſtruments of deſtruction levelled againſt him, he then proceeds forward without betraying the ſmalleſt emotions of fear. Man, indeed, is not the enemy he ſeems to be moſt apprehenſive of: on the contrary, the ſound of the ſhepherd's pipe ſeems to inſpire him with pleaſure; and, accordingly, the hunters ſometimes make uſe of that inſtrument, in order to allure the poor animal to his deſtruction.

The Stag eats with great deliberation, and is very

very delicate in the choice of his paſture; and, when he has ſatisfied the calls of nature, he retires to the covert of ſome thicket, in order to chew the cud in ſecurity. However, he ſeems to perform the act of rumination with much greater difficulty than either the cow or the ſheep; for the graſs is not returned from the firſt ſtomach without much ſtraining, and a kind of hiccup, which is extremely perceptible during the whole time of it's continuance: but this defect may probably proceed from the greater length of the neck, and the narrowneſs of the paſſage, which in animals of the cow and ſheep kind are conſiderably ſhorter and wider.

This animal ſeldom drinks in the winter ſeaſon, and ſtill leſs in the ſpring, while the plants are tender, and covered with the morning dew; but, in the heat of ſummer, and during the rutting-time, he is obſerved conſtantly to frequent rivers and lakes, as well to allay his thirſt as to cool his ardour. He ſwims with great eaſe and ſtrength, particularly when he is in good condition, his fat keeping him buoyant, like oil on the ſurface of the water; and, at ſuch ſeaſons, he even ventures out to ſea, ſwimming from one iſland to another, though frequently ſeveral leagues aſunder.

The voice of this animal is ſtronger, louder, and more tremulous, in proportion as he advances in age; and, during the rutting-ſeaſon, it is even terrible. The cry of the hind or female is not ſo loud as that of the male, and is never excited but through apprehenſions for the ſafety either of herſelf or her young; and it may perhaps be unneceſſary to add, that ſhe is deſtitute of horns, and is more feeble and unfit for hunting than the male. As ſoon as ſhe has conceived, ſhe ſeparates herſelf from the males, and all intercourſe with each other is immediately ſuſpended. The time of geſtation continues between eight and nine months; and ſhe ſeldom produces more than one at a time.

The uſual ſeaſon of parturition is about May, or the beginning of June, during which theſe creatures are very aſſiduous to conceal their young in the moſt obſcure retreats. Nor is this a needleſs precaution, ſince almoſt every other animal then becomes their formidable enemy: the eagle, the falcon, the oſprey, the wolf, and the dog, as well as all the rapacious animals of the cat kind, are at this period in continual motion, for the diſcovery of their abodes. But, what appears extremely unnatural, the Stag himſelf is alſo their avowed enemy; and the hind is obliged to exert all her induſtry in order to conceal her young from him, as one of their moſt dangerous aſſailants. At this ſeaſon, therefore, the courage of the male ſeems to be transferred to the female; for ſhe defends her offſpring againſt her leſs formidable opponents by force; and, when purſued by the hunter, even expoſes herſelf to danger, for the purpoſe of diverting his attention from thoſe objects of her regard: ſhe flies before the hounds, in a direct courſe, with amazing fleetneſs; and, if ſhe is ſo fortunate as to eſcape with her life, ſhe returns to her young after having eluded her purſuers. The calf (for ſo the young of this animal is called) never quits the dam during the whole ſummer; and, in winter, the hind, together with all the males under a year old, aſſemble in herds, which are more or leſs numerous in proportion to the mildneſs or ſeverity of the ſeaſon. At the approach of ſpring, the ſeaſon of geſtation, they ſeparate, none but thoſe of the age of one year remaining aſſociated. Theſe animals, however, are in general gregarious; and only danger or neceſſity can poſſibly divide them.

Of all the enemies to the Stag, thoſe of the human ſpecies appear to be the greateſt. Men of every age and nation have made choice of this animal as the object of one of their moſt favourite purſuits; and thoſe who firſt hunted from neceſſity, have continued the practice for the ſake of amuſement. In this country in particular, hunting has ever been eſteemed the favourite diverſion of the great; and indeed, originally, beaſts of chace had this whole iſland for their range, they knew no other limits than the ocean, nor acknowledged any particular maſter.

The juriſprudence of the Roman empire, which was accommodated to the manners of the firſt ages, eſtabliſhed it as a law, that as the natural right of ſuch things as have no proprietor belongs to their firſt poſſeſſor, ſo all kinds of wild beaſts, birds, and fiſhes, are the property of thoſe individuals who can firſt catch them. But the northern barbarians, who over-ran the Roman empire, entertaining a ſtrong reliſh for this rude amuſement, and being now poſſeſſed of more eaſy means of ſubſiſtence from the lands they had conquered, their chiefs and leaders began to appropriate the ſole right of hunting; and, inſtead of a natural right, they made it the privilege of royalty. When the Saxon kings, therefore, had eſtabliſhed themſelves into an heptarchy, the chaces were reſerved by each ſovereign for his own particular diverſion: the arts of war and hunting, in thoſe uncivilized ages, conſtituted the only employments of the great; their active but uncultivated minds were ſuſceptible of no pleaſures but ſuch as were of a violent kind, procured exerciſe for their bodies, and charmed away the languor of reflection. But, as the Saxon kings appropriated thoſe lands only to the buſineſs of the chace which before lay waſte, ſo no individual received any injury from the reſtraint. The caſe, however, was totally altered when the Norman kings got poſſeſſion of the throne: the paſſion for hunting was then carried to exceſs, and every civil right was involved in univerſal ruin. Even in a ſuperſtitious age, the ardour for hunting was ſtronger than the conſideration of religion: the village communities, nay, even the moſt ſacred edifices, were thrown down, and turned into one extenſive waſte, in order to make room for animals which were the objects of a tyrant's heedleſs pleaſures; ſanguinary laws were enacted for the preſervation of the game; and, in the reigns of William Rufus and Henry I. it was leſs criminal to commit murder than to deſtroy a beaſt of chace. Thus royal tyranny prevailed while the Norman line filled the throne; but, when the Saxon line was reſtored under Henry II. the impolitic rigour of the foreſt-laws was meliorated: the barons alſo, for a conſiderable time, imitated not only the encroachments, but alſo the amuſements, of their monarchs; yet, when property began to be more equally diſtributed, through the introduction of arts and the progreſs of induſtry, theſe extenſive hunting-grounds became more limited; and, as tillage and huſbandry increaſed, beaſts of chace were obliged to give way to thoſe which mankind had taken more immediately under their protection.

In the preſent cultivated ſtate of this country, Stags are almoſt unknown in their wild, natural condition; and ſuch as remain among us, are kept under the name of Red Deer, together with the Fallow-Deer; but they are much leſs numerous than formerly. Their exceſſive ferocity during the rutting-ſeaſon, and the coarſeneſs of their fleſh, have contributed

contributed in a great meaſure to their extermination. The few that ſtill remain in a wild ſtate are found on the moors which border on Cornwall and Devonſhire; in the Highlands of Scotland; and in Ireland, on the mountains of Kerry, where they eſſentially add to the magnificence and beauty of the romantic ſcenery of the celebrated Lake of Killarney.

In England, the Stag and the buck are hunted in a ſimilar manner; the animals are driven from their retreats in ſome park, and purſued through the open country. But thoſe who purſue the wild animals, have a higher object, as well as a much greater variety, in the chace. To let looſe a creature whoſe ſpirit has been broken by ſubjection, in order to catch it again, ſeems to be but a poor purſuit, as the reward, when obtained, is only what had before been given away; but to purſue an animal which owns no proprietor, and which the firſt ſeizer may be ſaid to poſſeſs, has ſomething in it at leaſt apparently more rational, that rewards the hunter for his toil, and ſeems to compenſate his induſtry. Excluſive of the ſuperior ſtrength and ſwiftneſs of the wild animal, it is endowed with more ſagacity to elude the attacks of the hunters, and conſequently adds to the pleaſures of the chace. In purſuing a Stag turned out of a park, or other incloſure, as it is unaccuſtomed to danger, ſo it is but little verſed in the ſtratagems of eſcape; and as the hunter follows him with the certainty of victory, he feels none of thoſe alternations of hope and fear which originate from the doubtfulneſs of ſucceſs.

Peculiar terms have been invented by hunters to expreſs the different objects of their purſuit; and, as theſe terms may be ſaid to form a part of the natural hiſtory of the animal, they are therefore neceſſary to be known. The profeſſors of almoſt every ſcience ſeem to delight in adopting a language familiar only to themſelves, and thus accumulate words which, in the eye of ignorance, have the ſpecious guiſe of knowledge. Accordingly, the Stag, when in his firſt year, is called a *calf*, or *hind-calf*; in his ſecond, a *knobber*; in his third, a *brock*; in his fourth, a *ſtaggard*; in his fifth, a *ſtag*; and, in his ſixth, a *hart*: whereas the female, (the hind) in her firſt year, is called a *calf*; in her ſecond, a *hearſe*; and, in her third, a *hind*.

The Stag, when in his retreat, is ſaid to *harbour*; and, when he cries, to *bell*. The print of his hoof is called a *ſlot*; his tail, a *ſingle*; and his ordure, the *feumet*. His horns are denominated his *head*: when ſimple the firſt year, they obtain the name of *broches*; the third year, *ſpears*; the fourth year, that part which bears the antlers is ſtiled the *beam*, and the little impreſſions on it's ſurface, *glitters*; while thoſe which riſe from the cruſt of the beam are called *pearls*. The antlers alſo have diſtinct names: the firſt which branches off is called the *antler*; the ſecond, the *ſur-antler*; and all the reſt which grow afterwards are called *royal antlers*, except the higheſt, which is called the *crown:* the little protuberances about the tops are called *croches*. The impreſſion on the place where the Stag has repoſed, is ſtiled the *layer*; but if it be in a covert, or a thicket, it is called his *harbour*. When he has entered a thicket, and there left marks by which his ſize may be gueſſed, it is called an *entry*; when he caſts his head, he is ſaid to *mew*; and, when he rubs it againſt the branches of trees, in order to diſengage the peel of his horns, he is ſaid to *fray*. When the animal, after being hard hunted, takes to the water, he is ſaid to *go ſail*; when he turns his head againſt the hounds, he is ſaid to *bay*; and, when the hounds purſue on the ſcent till they have unharboured him, they are ſaid to *draw on the ſlot*.

Such is a ſpecimen of the terms uſed by hunters in purſuing the Stag; many of which are now either become obſolete, or only retained by huntſmen and game-keepers. The chace, however, ſtill continues a favourite ſport in thoſe parts of the kingdom where Red Deer abound; and often conſtitutes the amuſement of thoſe whoſe minds might be ſuppoſed capable of more liberal purſuits.

In thoſe few places where this animal remains perfectly wild, that amuſement, as already obſerved, is far ſuperior. The firſt grand concern of the hunter, when he leads forth his hounds to the mountain's ſide, where Deer are generally known to reſort, is to ſelect a proper Stag for the chace. His ambition is to unharbour the largeſt and boldeſt of the whole herd; and for this purpoſe he examines the track, which if he finds long and large, he concludes that it muſt have belonged to a Stag, and not a hind, whoſe footſteps are rounder. Thoſe prints alſo which he leaves on trees by rubbing his horns againſt them, demonſtrate his ſize, and point him out as a proper object of purſuit.

In tracing Stags to their haunts, the following particulars are obſervable. They change their manner of feeding every month. At the concluſion of their rutting-time, which is about November, they feed in heaths and broomy places. In December, they herd together, withdrawing into the boſoms of foreſts, for ſhelter from the ſeverity of the weather, where they feed on holm, elder-trees, and brambles. The three ſubſequent months, (namely, January, February, and March) they ſeparate into companies of four or five; and, venturing towards the margins of the woods, there feed on winter paſture, but ſometimes making incurſions into the neighbouring corn-fields, in order to devour the tender ſhoots on their firſt appearance above ground. In April and May, they reſt in thickets and other ſhady places, ſeldom venturing forth unleſs rouzed by impending danger. In September and October, their annual ardour returns; and then they quit the thickets, and boldly face every danger, without any certainty either of food or ſhelter.

When, from a knowledge of the foregoing circumſtances, the hunters have diſcovered the reſidence of the Stag, and the quality of the game, their next buſineſs is to uncouple and caſt off their hounds in the purſuit; who no ſooner perceive the timid animal flying before them, than they open in concert in full cry, following rather by the ſcent than the view, encouraging each other to perſevere in the chace, and tracing the fugitive with amazing ſagacity: nor are the ſportſmen leſs ardent, cheering the dogs, and directing their purſuit. On the other hand, the Stag, when firſt unharboured, ſeems to fly with the velocity of the wind, leaving his purſuers far behind him; till at length, having gained his former coverts, and no longer hearing the cries either of the hounds or hunters, he ſtops, views every object around him, and ſeems to recover his natural tranquillity. But this ceſſation proves only momentary; for his reſolute purſuers continue to trace him, and he is once more apprized of his approaching deſtruction. He, however, renews his efforts to eſcape, and again leaves his enemies almoſt at their former diſtance: but this

this ſecond attempt rendering him more feeble and languid than before, when his purſuers approach him, he is unable to outrun them with his wonted celerity. The wretched Stag, therefore, is now obliged to practiſe all his little arts of evaſion, which ſometimes, though but ſeldom, prove effectual. In proportion as his ſtrength fails him, the ardour of purſuit is increaſed; he tracks more heavily on the ground; and this circumſtance adding ſtrength to the ſcent, the cries of the hounds are redoubled, and their approach is accelerated. In this dilemma the Stag takes refuge among the herd, and tries every artifice to ſhift the impending danger to one or other of his companions. Sometimes he ſends forth a little Deer in his ſtead, and lies cloſe himſelf, that the dogs may be induced to over-ſhoot him; and, at others, he breaks into one thicket after another in order to find Deer, rouſes them, collects them together, and endeavours to put them on the tracks which he himſelf has made. All his old aſſociates, however, ſhun him with the moſt vigilant circumſpection, and leave him to his fate. Thus abandoned by his fellows, the devoted animal has recourſe to other ſtratagems. He doubles and croſſes ſuch places as are leaſt liable to retain his ſcent. He alſo runs againſt the wind, not only to cool himſelf, but the better to hear the voice and judge of the diſtance of his implacable enemies. It now appears evident that he is ſorely preſſed; particularly by his manner of running, which, from the bounding eaſy pace wherewith he ſet out, is converted into a ſtiff, ſhort amble: his mouth alſo becomes black and dry, and entirely deſtitute of foam; his tongue hangs out; and the big round tear, according to ſome, is ready to ſtart from his eye. When every other method of eſcape proves ineffectual, he at laſt takes to the water, and attempts to croſs whatever lake or river he firſt approaches; and, while ſwimming, is at all imaginable pains to keep in the middle of the ſtream, leſt, by touching the bough of a tree, or the herbage on the banks, he ſhould communicate his ſcent to the hounds; nor does he ever ſwim againſt the current. In this emergency, too, he often conceals himſelf under the ſurface of the water, diſcovering only his antlers and the tip of his noſe. All his reſources being now at an end, he at laſt collects the feeble remains of his ſtrength, in order to oppoſe thoſe enemies from whom he is utterly unable to eſcape; and, turning towards them, threatens them with his horns, guarding himſelf on every ſide; and for ſome little time maintains the unequal conflict. In this ſituation, being enraged to deſperation, he furiouſly attacks the firſt dog or man that approaches him, and not unfrequently dies revenged: at that time, however, the more cautious hounds avoid him till the whole pack is aſſembled; after which, being quickly ſurrounded, and brought to the ground, the huntſman winds a *treble mort* with his horn.

Such is the manner of hunting the Stag in England. But every country has a peculiar method of it's own, adapted either to the nature of the climate, the face of the ſoil, or the genius of the people. The ancient way, however, was very different from that now practiſed. The huntſmen employed their dogs only to diſcover the game, not to rouze it: hence they were not very particular either as to the notes of their hounds, or the compoſition of their packs; and that dog who opened before he had diſcovered his game, was held in little eſtimation. They uſually endeavoured, by ſilent perſeverance, rather to find out the retreat of the animal, and to ſurround it with nets and engines, than to arouſe him with their united cries, and thus force him into the toils which they had previouſly laid for him. In ſucceeding times, the manner of hunting ſeems to have undergone ſome alteration; and in Sicily in particular, the ſubſequent mode was adopted. The nobility and gentry having been informed which way a herd of Deer paſſed, gave notice to each other, and appointed a day for a hunting-match. For this purpoſe, every perſon concerned was to bring with him a croſs bow, and a bundle of ſtaves ſhod with iron, having each of their heads bored, and a cord paſſing through and uniting them all. Between each of theſe ſtaves was hung a bunch of crimſon feathers, ſo diſpoſed, that, on the gentleſt breath of wind, they whirled round, and preſerved a kind of fluttering motion. After this, the perſons appointed to fix theſe ſtaves withdrew, and concealed themſelves in the neighbouring coverts; when the huntſman in chief, entering the fence with his hounds, rouſed the game with a full cry. The affrighted Deer, which fled on all ſides, on approaching the lines, were ſcared by the fluttering of the feathers, and wandered about within this artificial paling, ſtill awed by the ſhining and fluttering plumage that encircled their retreat. The huntſman, however, ſtill purſuing, and calling each perſon by name as he paſſed his ſtand, commanded him to ſhoot the firſt, ſecond, or third animal, according to his pleaſure; and if any one of theſe perſons preſſed, or ſingled out a different creature from that which had been aſſigned him, it was regarded as a moſt diſgraceful miſchance. In this manner the whole herd was deſtroyed, and the day concluded with mirth and feſtivity.

There are but few varieties of the Red Deer or Stags of this country, and ſuch are uſually of the ſame ſize and colour; but the caſe is far otherwiſe in many other parts of the world, where they differ in their ſhape, ſize, horns, and colour. Thoſe of China, according to Du Halde, are not taller than a common houſe-dog, and hunting them conſtitutes one of the principal diverſions of the great. Their fleſh, while young, is exceedingly tender; but, when they arrive at maturity, it begins to grow hard and tough. The method adopted by the Chineſe to catch theſe animals is pretty ſingular. They carry with them the heads of ſome of the females ſtuffed, whoſe cry they imitate with great addreſs: on which the male inſtantly makes his appearance; and, looking on every ſide, perceives one of theſe heads, which a hunter, who is himſelf concealed, holds up to view; and when the Stags, by means of this deception, have approached pretty near, the whole company of the hunters inſtantly ſurrounds, and often takes them alive.

The Corſican Stags are likewiſe very ſmall, being not more than half the ſize of thoſe which are common to Britain; their bodies are ſhort and thick; their legs are ſhort; and their hair is of a dark brown colour.

In the foreſts of Germany there is a kind of Stag, called by the ancients the tragelaphus; and, by the natives, the bran, or brown Deer. It is of a darker colour than the common Stag, but of a lighter ſhade on the belly; and having long hair on the neck and throat, on that account ſomewhat reſembles the goat.

Animals of the Deer kind, though their ſpecies are not very numerous, ſeem to be diſſeminated

over all parts of the globe. The continent of America, in which neither the ſheep, the goat, nor the antelope, have been originally bred, nevertheleſs produced Stags, and other animals of the Deer kind, in abundance. The Mexicans have a breed of white Stags in their parks, which, according to Buffon, are called Stags-royal. The Canadian Stags differ principally from thoſe of Europe in having larger horns; and alſo in the direction of their antlers, which rather revert than project forwards. The ſame difference of ſize which is obſervable among our Stags, is alſo to be traced in thoſe of the American continent; and, if we may credit Ruyſch, the natives have reduced them to the ſame degree of tameneſs that we have our ſheep, goats, and black cattle: they ſend them forth in the morning to feed in the foreſts; and at the approach of night they are brought home again by thoſe herdſmen who have ſuperintended them during the day; and the inhabitants depend ſolely on the hind for their neceſſary ſupply of milk and cheeſe. Thus we ſee that an animal which appears to be formed only for the amuſement of man, may with facility be brought to ſupply his neceſſities.

Deer, Fallow. The Fallow-Deer and the Stag are as nearly allied as any two animals can poſſibly be. Alike in ſhape, diſpoſition, fleetneſs, timidity, and the ſuperb furniture of their heads, it might naturally be conjectured that they aſſociated together; and yet no two animals avoid each other with more rooted averſion: they never herd in the ſame place; they never engender together, or form a mixed breed; and, even in thoſe countries where Stags abound, the buck ſeems to be an utter ſtranger. In ſhort, they form two diſtinct families, which, though ſo ſeemingly conjoined, are nevertheleſs very remote; and, though endowed with the ſame habitudes, retain a fixed animoſity.

As Fallow-Deer are much ſmaller, ſo they are of a leſs robuſt and ſavage nature than thoſe of the ſtag kind. They are ſeldom found wild in foreſts; but are generally bred up in parks, where they are either kept for the purpoſes of hunting or luxury, their fleſh being greatly preferable to that of any other animal. Their horns are broad and palmated at their extremities, pointing a little forward, and branched on their hinder ſides; they have two ſharp and ſlender brow-antlers, and, above them, two ſmall ſlender branches; whereas the horns of the ſtag are round in every part: in the one animal they are flatted and ſpread like the palm of the hand; and, in the other, they grow like a tree, every branch being ſhaped like the ſtem which ſupports it. The colour of the Fallow-Deer is more various than that of the ſtag, and it's tail is longer; but, in other reſpects, the affinity is very cloſe.

The horns of the buck, like thoſe of all other animals of this genus, are ſhed annually, and repaired in the uſual ſpace of time: this change, however, happens later with reſpect to the buck, and conſequently his rutting-ſeaſon approaches nearer to the winter. At that period he is much leſs furious than the ſtag; nor does he exhauſt himſelf ſo much through the violence of his ardour. He never quits his natural paſtures in queſt of the females, nor attacks other animals with indiſcriminate rage: however, the males frequently combat with each other for the poſſeſſion of the females; and it is not till after repeated conflicts that one buck obtains the ſovereignty of the whole band. A herd of Fallow-Deer is often obſerved to divide into two parties, and to engage each other with great ardour and obſtinacy, as if ambitious of ſecuring ſome favourite ſpot of paſturage, and of driving the vanquiſhed party into the coarſer and more ſterile parts. Theſe factions are headed by their reſpective chiefs, which are uſually the two oldeſt and ſtrongeſt of the herd; and theſe leaders always begin the engagement, the reſt fighting under their direction. From the diſpoſition and conduct which appear to regulate their mutual efforts, theſe combatants are no inconſiderable objects of curioſity: they attack each other in the greateſt order, retire, rally, mutually afford their aſſiſtance, and never yield the victory on a ſingle defeat; and ſuch conteſts are generally renewed for ſeveral days ſucceſſively, till one of the parties is obliged to give way, and to retreat to ſuch a ſituation as is moſt likely to afford them ſafety and protection.

The Fallow-Deer is eaſily domeſticated, and feeds on many articles which the ſtag refuſes; by which means he preſerves his veniſon better; and, even after rutting, does not appear entirely exhauſted. He continues nearly in the ſame ſtate through the whole year, though there are particular ſeaſons in which his fleſh is chiefly in eſteem. This animal browſes much cloſer than the ſtag; for which reaſon he is more prejudicial among young trees, which he often ſtrips too cloſely for recovery. The young Deer eat much quicker, and with more eagerneſs, than the old; they ſeek the females at their ſecond year; and, like the ſtag, are fond of variety. The doe, like the hind, goes with young above eight months, and commonly brings forth one at a time; but the two ſpecies differ in this circumſtance, namely, that the buck arrives to perfection at his third year, and lives till his ſixteenth; whereas the ſtag does not come to maturity till his ſeventh year, and lives till his fortieth.

Hunters have invented various names for the buck. In his firſt year he is called a *fawn*; in his ſecond, a *pricket*; in his third, a *ſorel*; in his fourth, a *ſore*; in his fifth, a *buck of the firſt head*; and, in his ſixth, a *great buck*. The female, (the doe) in her firſt year, is called a *fawn*; and, in her ſecond, a *tegg*.

The buck is hunted pretty much in the ſame manner as the ſtag, except that a leſs degree of ſkill is neceſſary with reſpect to the former than the latter. He is rouſed with more facility; and a ſufficient judgment may be formed by the view and mark, as to what grove or covert he enters, becauſe he ſeldom wanders from thence in order to change his layer or place of repoſe. When cloſely purſued, he makes towards ſome ſtrong hold or thicket with which he is acquainted, either in the more ſhady parts of a wood, or the ſteep of ſome mountain; nor does he fly far before the hounds, nor croſs and double like the ſtag: he will take the water, however, when reduced to extremity, but he can neither ſwim ſo long nor ſo ſwiftly as that animal. Indeed, the ſtrength, cunning, and courage, of the buck, are much inferior to thoſe of the ſtag; and conſequently he affords neither ſo long, ſo various, nor ſo obſtinate a chace: beſides, being much lighter, he leaves a fainter impreſſion, as well as leſs powerful ſcent; and the dogs in purſuit are frequently at a fault.

The buck being a more delicate animal than the ſtag, he is ſubject to greater varieties. In England,

England, there are two kinds of Fallow-Deer, which are ſaid to be of foreign original; namely, the beautiful dappled kind, ſuppoſed to have been imported from Bengal; and the very deep brown ſort, now ſo common in many parts of this kingdom, which were brought from Norway by King James I. who, while there, obſerved that they were ſo hardy, as to be capable of ſubſiſting throughout the brumal ſeaſon without fodder, even in that inhoſpitable climate. He firſt introduced ſome of them into Scotland, and from thence into his chaces of Enfield and Epping in the vicinity of the palace of Theobalds; that monarch being extravagantly fond of the diverſion of hunting. Since that time, they have multiplied in many parts of the Britiſh empire; and England is at preſent more celebrated for it's veniſon than any other country on the terraqueous globe.

The fleſh of the French Fallow-Deer is much inferior, both in fatneſs and flavour, to that fed in Engliſh paſtures. The Spaniſh Fallow-Deer have more ſlender necks, and are as large as ſtags, but of a browner colour. Labet informs us, that in Guiana, a country of South America, there are Deer without horns, and much ſmaller than thoſe of Europe, but reſembling them in every other particular. They are very lively, and exceſſively timid; and, when purſued, ſhelter themſelves in ſituations where no other animals are capable of following them. The negro hunters watch for them in ſuch narrow paths as lead to their uſual places of paſture, and ſhoot at them as ſoon as they appear in ſight. Their fleſh, though ſeldom fat, is conſidered as a great delicacy.

All animals of the Deer kind ſeem equally uſeful, though their veniſon is by no means equally good. The uſes to which their ſkins are applied are too well known to need mentioning; their horns, which are very ſerviceable in various mechanical operations, abound alſo with that kind of ſalt which forms the baſis of the ſpirit of hartſhorn; and, after theſe ſalts are extracted, their remains, when calcined, become a valuable aſtringent, and anſwer many ſalutary medicinal purpoſes.

Deer, Roe-Buck. This animal, which inhabits Tartary and China, is alſo found in moſt parts of Europe, even as far northward as Norway; and Charlevoix ſays, that it is pretty common in North America. It was formerly a native of Wales and the northern parts of England; but at preſent the ſpecies no longer exiſts in any part of Great Britain, except in the Highlands of Scotland.

The Roe-Buck is one of the leaſt of the Deer kind known in our climate, being only about three feet in length, and two in height. The horns, which meaſure eight or nine inches, are erect, round, and divided into three branches; the body is covered with very long hair, well adapted to the rigours of it's mountainous retreats; the lower part of the hair is cinereous; near the extremities there is a narrow bar of black; and the points are yellow. The hair on the face is black, tipped with aſh-colour; the ears are long, their inſides being of a pale yellow, and covered with long hair; the cheſt, belly, legs, and inſides of the thighs, are a yellowiſh white; the rump is a pure white; and the tail is very ſhort. The figure of this little animal is very elegant, and it's fleetneſs is equal to it's beauty. It differs from the Fallow-Deer in having round horns; from the ſtag, in the ſmallneſs of it's ſize and the proportionable paucity of it's antlers; and from every animal of the goat kind, in annually ſhedding it's horns.

The Roe-Buck ſeems naturally attached to ſhady thickets and riſing ſlopes. Though far inferior, both in ſtrength and ſize, to the ſtag, it is more beautiful, more active, and more intrepid. It's hair is always ſmooth, clean, and gloſſy; and, as it delights in the pureſt air, it frequents only dry ſituations. When it's young are attacked by the ſtag, it boldly faces even that animal, and often comes off victorious. All it's motions are elegant and eaſy; bounding with the utmoſt facility, and continuing the courſe with little apparent fatigue. It is alſo poſſeſſed of extraordinary cunning in avoiding the hunters; and, though it's ſcent is much ſtronger than that of the ſtag, it more frequently makes good it's retreat.

Nor does the Roe-Buck differ from the ſtag only in ſuperior cunning, but alſo in it's natural appetites, inclinations, and entire habitudes. Inſtead of herding together, theſe creatures live in ſeparate families; the ſire, the dam, and the young, aſſociate together, and all ſtrangers are excluded from their little community. Every other ſpecies of Deer is inconſtant in affection; but the Roe-Buck never forſakes it's mate; for being generally bred up together from their firſt fawning, they become ſo mutually attached to each other, as never afterwards to ſeparate. Their rutting-ſeaſon continues but fifteen days; namely, from the latter end of October to about the middle of November: during which, they are not, like ſtags, overloaded with fat; they have none of that ſtrong odour which is peculiar to all others of the Deer kind; nor do they run to any of thoſe furious exceſſes obſervable in ſtags, and which ſo materially alter their ſtate. On ſuch occaſions, the Bucks only drive away their fawns, in order to make room for a ſucceeding progeny. However, when the ſeaſon of love is ended, the fawns return to the does, and continue with them for ſome time; after which they relinquiſh them entirely, for the purpoſe of commencing an independent family of their own.

The female goes with young but five months and a half; which peculiarity alone is ſufficient to diſtinguiſh this animal from all others of the Deer kind, whoſe time of geſtation continues for eight months and upwards. In this reſpect, the Roe ſeems allied to the goat kind; though, as already obſerved, the diſcrimination between the two races is ſufficiently diſtinct.

When the female is ready to bring forth, ſhe forms a retreat in the thickeſt part of ſome wood; being no leſs apprehenſive of the Buck, from which ſhe then ſeparates, than of the moſt ravenous beaſt. She generally produces two at a time; and ſometimes, though but rarely, three. In about ten or twelve days, the young are able to follow their dam, except in caſes of cloſe purſuit, when their ſtrength is by no means adequate to the fatigues of a continued chace. On ſuch occaſions, the affectionate tenderneſs of the dam is very ſingular; for, leaving her offſpring concealed in ſome deep thicket, ſhe expoſes herſelf to the moſt imminent danger, flying before the hounds, and employing every artifice in her power to miſlead them from thoſe objects of her love in which all her happineſs is centered. She courageouſly engages ſuch animals as are nearly on an equality with herſelf; attacks the ſtag, the wild cat, and even the wolf; and her efforts for the protection of her young are not relinquiſhed but with her life. Theſe her ſtruggles, however, frequently prove ineffectual; for numbers of the fawns are often taken alive by

the peaſants; more are devoured by the dogs; and ſtill more by the wolf, which has ever been conſidered as their implacable enemy. By ſuch repeated depredations on this beautiful creature, the Roe-Buck is gradually becoming more ſcarce; and, in many countries, the whole race is totally loſt.

Theſe animals, which were once pretty common in England, are at preſent totally unknown; and, in a few years, the breed will probably be extinct in the Highlands of Scotland, the only part of Great Britain in which they are now to be found. Even in France, where they were formerly extremely numerous, they are at preſent confined to a few provinces; and, perhaps, in a century or two, the ſpecies will there be alſo exterminated. Buffon indeed obſerves, that in thoſe diſtricts where Roe-Bucks are chiefly found, they ſeem to maintain their uſual numbers; and that the balance between their increaſe and deſtruction is held pretty even: however, the number is in general well known to decreaſe; for, wherever cultivation takes place, beaſts of nature are known to retire. Many animals which once flouriſhed in the world may now be extinct; and the deſcriptions of the more ancient naturaliſts, though taken from the life, are frequently regarded as fabulous, becauſe their archetypes are no longer extant.

Thoſe huntſmen who characterize only ſuch beaſts as fall under their cognizance, have given names to the different kinds and ages of the Roe-Buck, as well as to thoſe of the ſtag: thus, the firſt year they call it a *hind*; the ſecond, a *gyrle*; and, the third, a *hemuſe*; but, ſince the animal itſelf has been extinct in this country, theſe appellations have become obſolete.

The fawns continue to follow the Deer eight or nine months collectively; and, on ſeparating, their horns begin to appear, ſimple and without ramifications the firſt year, as in thoſe of the ſtag kind: theſe they ſhed at the end of autumn, and renew them during the winter; differing from the ſtag in this particular, which latter ſheds it's horns in the ſpring, and renews them in the ſummer. When the Roe-Buck has compleated the furniture of it's head, it rubs it's horns againſt trees, after the example of the ſtag, and thus diveſts them of their rough ſkin, and thoſe blood-veſſels which no longer contribute to their nouriſhment and growth. When theſe fall, and new ones begin to appear, this animal does not, like the ſtag, retire to the covert of ſome wood, but continues to frequent it's uſual haunts, only ſtooping with it's head, in order to avoid ſtriking it's horns againſt the branches of trees, the concuſſions of which it ſeems to feel with exquiſite ſenſibility.

As the growth of the Roe-Buck, till it's arrival at maturity, is much more rapid than that of the ſtag, ſo it's life is proportionably curtailed. It ſeldom lives more than twelve or fifteen years; and, if kept in a ſtate of domeſtic ſervitude, it's exiſtence is abridged to ſeven or eight. Being of a very delicate conſtitution, it requires variety of food, air, and exerciſe. It muſt be paired with a female, and kept in a park of conſiderable extent. It can eaſily be ſubdued, but never perfectly tamed. No arts can teach it familiarity with it's feeder, much leſs to ſhew any attachment to him; but it always retains ſome portion of it's natural wildneſs. It is ſubject to timidity from the ſlighteſt occaſions; and, in attempting to eſcape, it ſometimes daſhes itſelf with ſuch violence againſt the walls of it's incloſure, that it injures it's limbs ſo as to be utterly diſabled. Whatever care is taken to reclaim this creature, it can never be fully relied on; and it is liable to frequent fits of capricious fierceneſs, ſometimes attacking it's ſuppoſed enemies with no ſmall degree of force and impetuoſity.

The voice of the Roe-Buck is neither ſo loud nor ſo frequent as that of the ſtag. The young ones have a peculiar way of calling to the dams, which the hunters imitate with ſuch exactneſs, as frequently to allure them to their deſtruction; and, on particular occaſions, they become as it were intoxicated with their food; which, during the ſpring, is ſuppoſed to ferment in their ſtomachs. In ſummer, they keep cloſe under covert of the foreſts, and ſeldom venture abroad, except in very warm weather, in order to allay their thirſt at ſome neighbouring ſtream. In general, however, they are ſatisfied with the morning dew, and rarely gratify their appetites at the expence of their ſafety. They are generally obſerved to prefer the tender branches and buds of trees to corn or other vegetables; and it is univerſally allowed, that the fleſh of a Roe-Buck near two years of age is one of the greateſt known luxuries; though, perhaps, it's ſcarcity may ſomewhat enhance it's value.

This animal is more common in America than in Europe, and the varieties are more numerous. With us, indeed, there are but two known ones; the red, which is the larger ſort; and the brown with a ſpot behind, which is inferior in ſize. In Louiſiana, where the Roe-Buck is very common, the inhabitants in a great meaſure ſubſiſt on it's fleſh, which taſtes like well-fed mutton. It is alſo found in Brazil, where it obtains the name of cuguacu apara; but it differs from the European breed in ſome ſlight deviations in the horns. This animal is alſo ſaid to be found in China; but thoſe authors who have deſcribed it, ſeem to confound it with the muſk-goat, an animal of a very different nature.

Deer, Mooſe, or Elk. This animal is a native both of the old and new world; being known in Europe under the name of the Elk, and in America under that of the Mooſe-Deer. It is ſometimes, though rarely, caught in the foreſts of Germany and Ruſſia; but it is very numerous in North America, where the natives trace it through the ſnow. However, the accounts of this animal are extremely various; ſome making it as large as the elephant, and others no bigger than the horſe.

The ſtature of the Mooſe-Deer being it's principal peculiarity, it were to be wiſhed that naturaliſts had been ſufficiently explicit in their deſcriptions of it. If we were to judge of the ſize of this animal from ſome horns which have at times been caſually dug up in Ireland, it might reaſonably be conjectured to be at leaſt ten feet high. Goldſmith informs us, that he has ſeen one of thoſe horns, which meaſured ten feet nine inches from tip to tip; and the accurate Pennant ſays, that he met with one, in the houſe of the Hudſon's Bay Company, which weighed fifty-ſix pounds, was thirty-four inches in length from tip to tip, and the breadth of the palm was thirteen inches and a half. Between theſe two accounts there is an amazing difference; and unqueſtionably there was a great diſparity in the animals which ſupported ſuch horns. From the dimenſions of the former, it appears that an animal of an extraordinary ſize would be required to produce them. No ſmall degree of ſtrength would be neceſſary to ſuſtain a head having ſuch extenſive and heavy antlers;

antlers; and it is not to be doubted that the bulk of the body muſt have been proportionable to the ſize of the horns. As to the more noble animals, Nature obſerves a perfect ſymmetry; and it would be unjuſt to ſuppoſe that ſhe failed in this particular inſtance.

A young female, kept a few years ſince at the late Marquis of Rockingham's at Parſons Green, is thus deſcribed by the ingenious Pennant. 'It was about a year old, and meaſured five feet, or fifteen hands, to the top of the withers; the head alone was two feet long; the length of the animal, from the noſe to the tail, was about ſeven feet; the neck was much ſhorter than the head; the mane was thick, ſhort, erect, and of a light brown colour; the eyes were ſmall; the ears were one foot long, very broad, and ſlouching; the noſtrils were very large; the upper lip, which was ſquare, projected conſiderably over the lower; and in the middle there was a ſulcus, ſo deep as to appear almoſt bifid: the noſe was broad; under the throat there was a ſmall excreſcence, from whence depended a long tuft of coarſe black hair; the withers were very high; the fore-legs were three feet three inches long, and from the bottom of the hoofs to the end of the tibia two feet four inches; the hind-legs were much ſhorter than the fore ones; the hoofs were very much cloven; and the tail was very ſhort, duſky above, and white beneath. The colour of the body in general was a hoary black; but about the face there was a greater portion of grey than in any other place.' This animal, which was brought from North America, was called the Mooſe-Deer. A male of this ſpecies, and the horns of others, having been imported into England of late years, prove this creature, on comparing it's horns with thoſe of the European Elk, to be one and the ſame animal.

As the female animal above deſcribed was only one year old, we may reaſonably conclude that the Mooſe-Deer, eſpecially in America, grow to an enormous ſize. Nevertheleſs, the accounts given by Jocelyn and Dudley of the ſize of the American Mooſe-Deer ſeem to be greatly exaggerated; the former aſſerting, that ſome are found twelve feet high, and the latter making it eleven: however, Charlevoix and others deſcribe it as being of the ſize of the horſe, or the Auvergne mule, which is a very large ſpecies; and Jocelyn and Dudley have probably been too credulous, with reſpect to the relations of thoſe hunters and Indians who were fond of the marvellous. It is indeed certain, that the Elk is common to both continents; and that the American one, having the advantage of ranging in more extenſive foreſts, and of more luxuriant food, grows to a larger ſize than the European. In all quarters of the world, however, it is timid and gentle, content with it's paſture, and unwilling to diſturb any other animal when it can obtain a ſupply for itſelf.

In the year 1742, a female of the European kind was exhibited at Paris, which was caught in a foreſt of Red Ruſſia. Though then young, it was ſix feet ſeven inches high; from the tip of the noſe to the inſertion of the tail, it was ten feet; and the circumference of the body was eight feet. The hair, which was long and coarſe, reſembled that of the boar; the ears were eighteen inches long, and not unlike thoſe of the mule; under the throat there was a beard like that of the goat; a bone, as large as an egg, projected in the middle of the forehead between the horns; and it made uſe of it's fore-feet as a defence from the aſſaults of it's enemies. It's exhibiters aſſerted, that it ran and ſwam with aſtoniſhing ſwiftneſs, and that it was extremely fond of water. It's daily allowance of food was thirty pounds of bread, beſides hay; and it's beverage about eight pails of water. It was docile and familiar, and ſufficiently ſubmiſſive to it's owner.

The foregoing account circumſtantially differs from that we have received of the Mooſe, or American Elk. Of this there are two kinds, namely, the common light grey Mooſe, which is not very large; and the black Mooſe, which grows to an enormous height. Dudley obſerves, that a certain female of the black Mooſe kind, of the age of four years, was within one inch of ſeven feet high. However, all animals of this kind have flat palmated horns: at the head there is a ſhort trunk, but it ſoon ſpreads to at leaſt a foot in breadth, and is furniſhed with a kind of ſmall antlers like teeth on one of the edges. In this particular all animals of the Elk kind agree, as well the European Elk as the grey and black Mooſe-Deer.

Theſe animals delight in cold countries, feeding on graſs in ſummer, and on the bark of trees in winter. When the ground is wholly covered with deep ſnow, the Mooſe-Deeer herd together under tall pine-trees, from which they ſtrip the bark, and remain always in thoſe parts of the foreſts which yield them that kind of ſubſiſtence. At theſe ſeaſons the natives prepare to hunt them; and particularly when the ſun begins to melt the ſnow by day, and is frozen again at night; for then the icy cruſt which covers the ſurface of the ſnow is too weak to ſupport their weight, and therefore retards the motions of the animals. The Indians no ſooner perceive a herd of them at a diſtance, than they prepare for the purſuit of one of them; which is not, as in ſome countries, the amuſement of an hour, but is attended with toil, difficulty, and danger. The timorous animal, on obſerving the firſt approach of it's enemies, immediately endeavours to eſcape, but ſinks at every ſtep. Still, however, it purſues it's courſe maugre a thouſand obſtacles: the ſnow, which is often upwards of four feet deep, yields to it's preſſure, and impedes it's ſpeed; the ſharp ice wounds it's feet; and it's towering horns are frequently entangled in the branches of trees: theſe, however, are broken down by the animal with facility; and, in whatever path the Mooſe-Deer runs, it is eaſily traced by the continual ſnapping of theſe branches. In this manner the chace is ſometimes continued for a whole day; and, at others, for two or more ſucceſſive days; the purſuers being often no leſs excited by famine, than the purſued accelerated by fear. Perſeverance, however, generally ſucceeds; and the Indian who firſt comes near enough, darts his lance at the Mooſe-Deer with unerring aim, which ſticking in the poor creature's body, encreaſes it's efforts to eſcape. The devoted animal now proceeds till it's purſuers once more overtake it, and the blow is repeated: on which it again ſummons forth all it's remaining vigour, in order to get a-head; but being at laſt quite worn out through fatigue and loſs of blood, it ſinks at once, and becomes an eaſy prey.

The fleſh of the Mooſe-Deer, which is extremely well taſted and nutritive, well repays the exertions of the hunters. The hide is ſtrong, and ſo thick, that it is generally bullet-proof: however, it is ſoft and pliable; and, when tanned, is exceedingly light, yet extremely durable. The fur is a light grey in ſome, and blackiſh in others; and, when

viewed through a microſcope, appears ſpongy like a bull-ruſh, and is ſmaller at the roots and points than in the middle; for which reaſon it lies very flat and ſmooth; and, though ever ſo much ruffled, ſtill returns to it's former ſtate. The horns alſo are very valuable, inaſmuch as they are applied to all thoſe purpoſes for which hartſhorn is beneficial.

This animal is ſaid to be ſubject to the epilepſy, as it frequently falls down when purſued, and thus becomes an eaſier prey; on which account ſome have imagined the hinder hoof to be poſſeſſed of an antidote againſt all epileptic diſorders. This, however, may be regarded as a vulgar error; as well as the petty fiction of the animal's curing itſelf of that diſorder by the application of it's hinder hoofs to it's ears.

The pace of Mooſe-Deer is ſomewhat ſingular, being a high ſhambling trot; but they move with great celerity. In Sweden, they were formerly much uſed in drawing ſledges; but, as the eſcape of criminals was frequently effected through their means, the uſe of them has been long prohibited under very ſevere penalties.

Though Mooſe-Deer are in general inoffenſive animals, during the rutting-ſeaſon, and when wounded, they become very furious, and attack whatever comes in their way with the united efforts of their horns and hoofs.

Deer, Rein. The Rein-Deer, which is the moſt uſeful, as well as extraordinary, of all animals of the Deer kind, inhabits the frigid regions of the north: and all attempts to reconcile it to more ſouthern ones have proved ineffectual; for, when tranſported from it's native ſoil to a more propitious one, it ſoon feels the influence of the change, and, by a gradual decline, expires in a very few months. Nature ſeems to have fitted this animal entirely for the neceſſities of that hardy race of mortals who live near the pole. It is met with farther north than any other hoofed quadruped. In America, it is found in Spitzbergen and Greenland, but not farther ſouth than Canada; in Europe, it inhabits Samoieda, Lapland, and Norway; in Aſia, it traverſes the north coaſt as far as Kamtſchatka, and the interior parts as low as Siberia; but, in Africa, it is totally unknown; nor does it indeed appear in any country where other animals can ſuperſede it's utility. From this creature alone the natives of Lapland and Greenland ſupply moſt of their wants. It anſwers the purpoſes of a horſe, in conveying themſelves, as well as their humble furniture, from one mountain to another; thoſe of the cow, in affording them milk; and thoſe of the ſheep, in furniſhing them with a warm kind of cloathing perfectly adapted to the climate: the fleſh ſerves them for food; and the tendons for bowſtrings; which laſt, when ſplit, ſupply the want of thread. Thus, from this animal alone, the inhabitants of thoſe hyperborean regions reap as many advantages as we derive from many; ſo that Providence, as a compenſation for the numerous local diſadvantages which they experience, has given them this faithful domeſtic, more patient, as well as more beneficial, than perhaps any other on earth.

The horns of the Rein-Deer are large, but ſlender, bending forwards, and palmated towards their tops; with brow-antlers broad and palmated. Both the male and female are furniſhed with horns; but thoſe of the latter are of inferior dimenſions, and have fewer branches. The height of a full-grown Rein-Deer is about four feet ſix inches; it is lower, and ſtronger built, than the ſtag; it's legs are ſhorter and thicker; and it's hoofs are alſo broader. It's hair is very thick; it's ears are large; and it has always a black ſpace round the eyes. It's pace, which is rather a trot than a bounding motion, it is capable of continuing for a whole day, without appearing to be fatigued. It's hoofs are cloven and moveable; and, in walking, it ſpreads them abroad, in order to prevent it's ſinking in the ſnow. When it proceeds on a journey, it lays it's horns on it's back; while there are two branches which overhang it's forehead, and almoſt cover it's face.

The following circumſtance ſeems peculiar to this animal and the elk; namely, that a pretty loud cracking noiſe is heard as they move along: this ſound ariſes from their manner of treading; for, as each of the animals reſts on it's cloven hoof, it ſpreads on the ground, and the two diviſions ſeparate from each other; but, when it is lifted up, the diviſions cloſe again, and, ſtriking againſt each other, occaſion the above noiſe.

When the Rein-Deer firſt ſhed their hair, they are of a brown colour; but, in proportion as the ſummer ſeaſon advances, their hair begins to grow whitiſh; and at laſt they are nearly grey. Their necks are covered with long depending hair, coarſer than that on any other part of their bodies; and their feet, juſt at the inſertion of the hoofs, are ſurrounded with rings of white.

After the rutting-time, which happens towards the latter end of November, theſe animals ſhed their horns, which are not compleatly furniſhed again till towards autumn. The females always retain theirs till they bring forth; and, if they prove barren, which is not unfrequently the caſe, they do not ſhed them till winter. The caſtration of Rein-Deer does not prevent the ſhedding of their horns; but the time of this annual diveſtment is accelerated or retarded according to the condition of the animals.

In Lapland, where theſe creatures conſtitute the principal wealth of the natives, ſome of them frequently poſſeſs upwards of a thouſand head in a ſingle herd. The mountainous part of this country is ſterile, bleak, and totally uninhabitable during the winter; but, in the ſummer ſeaſon, it is the moſt deſirable ſituation of this inhoſpitable climate, and by far the moſt populous. The Laplanders generally reſide on the declivities of the mountains, in ſmall cottages, three or four of which are erected contiguous to each other; and in them they lead a chearful, innocent, and ſocial life. On the approach of winter, however, they are obliged to deſcend into the plains, each individual bringing with him his whole herd, and leading it to thoſe ſpots where the paſturage appears moſt luxuriant.

The woody part of the country is ſtill more deſolate and forbidding; for there the whole face of nature preſents a rueful ſcene of trees devoid of fruit, and plains without verdure. As far as the eye is capable of reaching, nothing is to be ſeen, even in the midſt of ſummer, but barren fields, covered only with a kind of moſs almoſt as white as ſnow; no graſs, no agreeably diverſified landſcapes, appear, but only a few ſolitary pine-trees, which have eſcaped the frequent conflagrations by which the natives burn down their foreſts. What is ſtill more extraordinary, as the whole ſurface of the earth is cloathed in white, ſo, on the contrary, the

foreſts

foreſts ſeem to the laſt degree black and gloomy: while one ſpecies of moſs gives the fields a ſnowy appearance, another kind blackens the trees, and conceals their verdure. This moſs, however, which deforms the country, ſerves as the only ſupport of the Rein-Deer.

As ſoon as the ſummer begins to appear, the Laplander, who had fed his Rein-Deer on the lower grounds during the winter, drives them up the mountains, leaving the woody country, and the low paſture, which at that ſeaſon are in a moſt deplorable condition. The gnats, bred by the vivifying heat of the ſun in the marſhy bottoms and weedy lakes with which this country abounds more than any other part of the world, are then all on the wing, and darken the atmoſphere, like clouds of duſt in a windy day. The inhabitants, at this ſeaſon, are obliged to daub their faces with pitch mixed with milk, in order to ſhield them from the depredations of theſe noiſome inſects; and every place is then ſo much infeſted by them, that the natives dare hardly open their mouths leſt they ſhould be ſuffocated; for theſe vermin, from their numbers and minuteneſs, enter their noſtrils and eyes, and ſcarcely ſuffer them to be at eaſe for a ſingle moment. But theſe inſects are chiefly inimical to the Rein-Deer; for the horns of theſe animals being then in their tender ſtate, and poſſeſſed of extreme ſenſibility, a famiſhed ſwarm of theſe gnats inſtantly ſettles on them, and drives the poor animals almoſt to diſtraction. In this extremity, there are two remedies to which theſe quadrupeds, as well as their proprietors, are obliged to have immediate recourſe. The one is, for both parties to ſhelter themſelves near a large fire of tree-moſs adjoining to their cottage, the ſmoke of which extending to a conſiderable diſtance, repels the gnats; and thus one inconvenience excludes another and greater. The other conſiſts in aſcending to the ſummits of the higheſt mountains, where the air is too thin, as well as too cold, for theſe inſects to exiſt: there the Rein-Deer are often glad to continue for whole days together, though almoſt without any ſubſiſtence, rather than venture downward to lower ſituations, where, though they might probably meet with food congenial to their appetites, they would be deſtitute of every defence againſt their relentleſs perſecutors.

But gnats are not the only inſects which moleſt theſe uſeful animals; there is a ſpecies of gadflies which are ſtill more formidable to them. Theſe inſects are bred under their ſkins, where their eggs have been depoſited the preceding ſummer; and they are no ſooner produced as flies, than they again endeavour to depoſit their eggs in ſome ſituations ſimilar to thoſe from which they before emerged. Whenever, therefore, theſe flies appear over a herd of Rein-Deer, they put the whole flock in motion; who being aware of their enemies, exert all their little arts either to avoid or terrify them. Their endeavours, however, are too generally without ſucceſs; for the gadflies depoſit their eggs with great facility; which burrowing under their ſkins, lacerate them in various places, and often produce diſorders for which the natives have not as yet diſcovered any proper ſpecific.

In the mornings, as ſoon as the Lapland herdſmen drive their Deer to paſture, they employ their utmoſt care to hinder them from ſcaling the ſummits of the mountains, where there is generally little or no food, but to which the animals eagerly ſtrive to aſcend, in order to be at a diſtance from their adverſaries. At ſuch times there are uſually ſtrong conteſts between the dogs and the Deer; the latter endeavouring to climb the hills, and to gain their tops, which are perpetually covered with ſnow; and the former driving the latter downward to thoſe ſpots where their food is moſt plentiful, and where both the men and dogs guard them throughout the whole day with the utmoſt precaution, and drive them homeward at the proper milking periods.

The ſeaſon of parturition is about the middle of May; and the females continue to give milk till about the middle of October. Every morning and evening during that interval, the herdſmen return to their cottages with their Deer, for the purpoſe of milking them; in which the women having previouſly lighted up ſmoky fires, thereby repel the inſects, and keep the Rein-Deer in a quiet ſtate. Every female affords nearly one pint of milk; which, though thinner than that of the cow, is nevertheleſs ſweeter and more nouriſhing. After being milked, the herdſmen drive them back to paſture; for they neither fold them, houſe them, nor provide for their ſubſiſtence, during the winter, nor improve their paſture by cultivation.

On the return of winter, when the gnats and flies are no longer to be dreaded, the Laplander, as already obſerved, deſcends into the lower grounds; and, as there are but few to diſpute the poſſeſſion of that deſolate country, he has then a very extenſive range for his herds. Their chief, and almoſt only food, at this ſeaſon, is the white moſs already mentioned, which, from it's ſupplying theſe animals with food, is called lichen rangiferinus. This plant, though unpleaſing to the ſpectator who has been accuſtomed to more propitious climates, is eſteemed by the natives as one of the choiceſt benefits and moſt indulgent gifts of nature. While their fields are cloathed with moſs, they envy neither the fertility nor the verdure of a ſouthern ſoil; and, warmly habited in their Deer-ſkin cloaths, with ſhoes and gloves of the ſame materials, they intrepidly drive their herds along the deſarts, ignorant of any higher luxuries than thoſe which their milk and ſmoke-dried fleſh afford them. Inured to the climate, they ſleep in the midſt of ice; or, waking, doſe away their hours amidſt the fumes of tobacco; while their faithful dogs perform the parts of active ſubſtitutes, and keep their herds from ſtraggling. The Deer, in the mean time, with inſtincts adapted to the ſoil, ſearch out their food, though buried under the deepeſt ſnows: they turn it up with their noſes, after the manner of ſwine; and, even though the ſurface of the ſnow be frozen, their hides are ſo very hard in thoſe parts, that they eaſily overcome theſe difficulties. It ſometimes however happens, though but ſeldom, that the winter commences with rain; and a froſt enſuing, covers the whole country with a glazed cruſt of ice. In that caſe, both the Laplander and his Rein-Deer are in a manner undone; for having no proviſions laid up againſt accidents, his only reſource is to cut down ſuch large pine-trees as are encruſted with moſs; which affording but a very ſcanty ſupply, the greateſt part of the herd inevitably periſhes, without any poſſibility of aſſiſtance. It ſometimes alſo happens, that even this ſupply cannot be had; for the Laplanders often burn down their woods, in order to improve and fertilize the ſoil which produces the moſs; and in this caſe nothing but ruin preſents itſelf, and hope ſets in deſpair.

Thus

Thus the paſtoral life, which is no longer known in populous and well-cultivated countries, is ſtill continued near the pole. Neither the coldneſs of the winter, the length of the nights, the wildneſs of the foreſts, nor the rambling diſpoſition of the herd, interrupt the regular tenor of the Laplander's guiltleſs life. By night as well as day he attends his favourite cattle, and is but little affected even in a ſeaſon whoſe inclemency would prove deſtructive to the enervated ſons of warmer climates. He neither manures his ground, nor brings in his harveſts; nor is he the hireling of another's luxury, for all his labours tend to obviate the neceſſities of his own ſituation; and theſe he undergoes with chearfulneſs, as he is certain of reaping all the fruits of his induſtry. If, then, it was our buſineſs to compare the Laplander with the peaſant of more ſouthern climes, we ſhould have little reaſon to pity his ſituation: the climate which he inhabits is rather terrible to us than to him; and, in other reſpects, he is bleſſed with liberty unbounded, and plenty adequate to the utmoſt of his deſires. His Rein-Deer, in which all his cares centre, ſupply him with all that ſimple nature requires, and even afford him every convenience which his ſituation admits of.

The Rein-Deer of this country are of two kinds, namely, the wild and the tame. The wild are larger, ſtronger, and more miſchievous, than the tame: their breed, however, is preferred to that of the latter; and the female of the tame kind is often ſent into the woods, from whence ſhe returns home impregnated by a male of the wild kind. Theſe are the beſt adapted for drawing of ſledges, to which they are early accuſtomed by the Laplanders, who yoke them to thoſe carriages by means of ſtraps encircling their necks, and depending between their legs. Theſe ſledges, which are exceedingly light, have their bottoms ſhod with the ſkins of young Deer, the hair being turned to ſlide on the frozen ſnow. Thoſe perſons who ſit in theſe vehicles guide the animals by the help of cords faſtened round their horns, encouraging them to proceed by their voices, and ſpurring them on with goads. Some of the wild breed frequently prove refractory, and turn upon their drivers; who on ſuch occaſions have no other reſource but to cover themſelves with their ſledges, and to ſuffer the animals to vent their fury on them.

But no creatures can be more active, patient, and alert, than the tame Rein-Deer; for, when urged, they will trot nine or ten Swediſh miles, or between fifty and ſixty, at one ſtretch. However, in ſuch caſes, the poor obſequious animals fatigue themſelves to death; and, if not prevented by an early diſpatch, will die in a day or two afterwards. In general, they are capable of travelling about thirty miles without either halting or ſuſtaining any damage from their efforts. This mode of journeying, which is the only one in Lapland, can only be practiſed in winter, when the ſnow is glazed over with ice; and, though it is a ſpeedy method of conveyance, and indeed the only alternative in that country, it is not effected without danger, inconvenience, and trouble.

To render theſe uſeful animals more obedient and beneficial, they are generally caſtrated; which operation the Laplanders perform with their teeth. Such as have undergone caſtration, are more eaſily fattened than others, as well as more capable of drawing their ſledges. One male is uſually left entire for every ſix females; and theſe continue in rut from the feaſt of St. Matthew to near Michaelmas. At this period their horns being perfectly burniſhed, their conteſts with each other are very fierce and obſtinate. The females do not begin to generate before they arrive at the age of two years; after which they continue breeding regularly every year till they become ſuperannuated. They go with young about eight months, and generally bring forth two at a time. The affection of the dam for her young is very remarkable; for, when they happen to be ſeparated from her, ſhe will return from paſture, continue calling round the cottage for them, and never deſiſt till they are laid, either dead or alive, at her feet. The fawns are at firſt of a light brown colour; but, as they grow up, they become darker; and at laſt the old ones are of a brown almoſt approaching to blackneſs. The young follow their dams two or three years; and do not arrive at their full growth till four, when they are broke, and trained to drawing the ſledges; in which employment they continue ſerviceable for four or five years longer. The longeſt period of their exiſtence ſeems to be limited to fifteen or ſixteen years; and, when they have attained their proper age, the Laplanders generally kill them for the ſake of their fleſh and hides: this they perform by thruſting their knives through the hind-parts of their necks into their ſpinal marrow, on which the animals inſtantly fall; and the arteries which lead to their hearts being cut, the blood diſcharges itſelf into the cavities of their breaſts.

Scarcely any part of the Rein-Deer can be deemed uſeleſs. As ſoon as it begins to wax old, and ſome time before the general ſeaſon of love, it is killed, and the fleſh dried in the air: it is alſo ſometimes hardened by means of ſmoke, and laid up for travelling proviſion when the natives migrate from one part of the country to another. During the winter, theſe animals conſtitute the only food of the Laplanders; and every four individuals in a family are allowed one Rein-Deer for their ſubſiſtence. In ſpring, the natives ſpare their herds as much as poſſible, and draw the principal part of their nouriſhment from the ſea. In autumn, they live wholly on fowls, which they either kill with croſs-bows, or catch in gins: nor is this a ſcanty ſupply; for, at that ſeaſon, ſea-fowls arrive in ſuch abundance, that the ponds and ſprings are entirely covered with them. Theſe birds, which are not very timid, and generally become an eaſy prey, are chiefly allured to ſuch places by thoſe ſwarms of gnats which, as already obſerved, overſpread the whole country during the ſummer ſeaſon; and now recompenſe their injurious treatment of the Rein-Deer by inviting ſuch vaſt numbers of theſe fowls as abundantly ſupply the natives with food for at leaſt one-fourth part of the year.

The milk of the Rein-Deer, when freſh, is warmed in a cauldron, and thickened with runnet; and then the curd is preſſed into cheeſes, which are ſmall, and well-taſted: theſe cheeſes never breed mites, as in other countries; and probably they are unknown in Lapland. After this proceſs, the whey which remains is warmed up again, and becomes of a conſiſtence as if thickened with the whites of eggs. On this ſimple food the Laplanders feed for a conſiderable part of the ſummer. They ſeldom make any butter, their milk affording a very ſmall quantity of cream; but what is turned to this purpoſe ſtrongly reſembles ſuet both in taſte and conſiſtence. Milk is never kept in Lapland till it becomes ſour; nor does it conſtitute any part

of

of that variety of diſhes ſo common in more ſouthern countries. The only delicacy procured from it ariſes from the boiling it up with wood-ſorrel, and coagulating it; after which the whole is put into caſks, or Deer-ſkins, and depoſited under-ground as a reſerve for the winter ſeaſon.

The ſkin of this animal, however, is ſtill more valuable than either of the above acquiſitions. From that part of it which covers the head and limbs, are made thoſe ſtrong ſnow-ſhoes which ſhield the feet of the natives from the inclemencies of the brumal ſeaſons. Of the other parts they make garments, which are extremely warm, and cover them from head to foot: the hair is worn on them externally; and they are ſometimes lined internally with the fur of the glutton, or ſome other animal of the climate which is provided with a warm ſkin. Their beds are likewiſe compoſed of the ſkins of the Rein-Deer; and are ſpread, on each ſide of the fire, upon ſome leaves of the dwarf birch-tree; which, without any other addition, afford a pretty comfortable lodging. Numbers of garments, formed of the ſkins of Rein-Deer, are annually imported into the more ſouthern parts of Europe, where they are found ſo effectual in repelling the cold, as to be worn even by perſons of the higheſt quality.

Though Rein-Deer are very vigorous and hardy animals, they are obnoxious to peculiar diſeaſes. It has already been obſerved what injuries they ſuſtain from gnats and gad-flies. Their hides are often pierced in various parts by the latter of theſe inſects; and numbers of them die in their third year from this ſole cauſe. Their dugs alſo frequently burſt in different places, when blood is emitted inſtead of milk. They ſometimes contract a loathing to their food; and, inſtead of eating, ſtand ſtill and ruminate. They are alſo, like the elk, troubled with vertigoes; and, in that caſe, uſually run round and round till they expire. The Laplanders judge of their ſtate by the manner of their turning: if they move to the right, they ſuppoſe their diſorder to be but ſlight; but, if to the left, they then deem them incurable.

Rein-Deer are alſo ſubject to ulcers near their hoofs, which diſqualify them either for travelling or keeping among the herd. But the moſt fatal diſorder incident to theſe animals, is that which the natives call ſuddataka, to which they are liable at all ſeaſons. The inſtant this diſeaſe attacks them, the poor creatures breathe with great difficulty; their eyes begin to ſtare, and their noſtrils to expand: they then alſo acquire an unuſual degree of ferocity, attacking every object that comes in their way with indiſcriminate fury. Still, however, they continue to feed, as if in perfect health; but they deſiſt from chewing their cud, and lie down more frequently than before. In this manner they continue, daily conſuming and becoming more emaciated, till at laſt they die through mere inanition; nor has a ſingle inſtance ever occurred of one of theſe animals having ſurvived this cruel diſorder, which, notwithſtanding it has but lately made it's appearance in that part of the world, has ſpoiled whole provinces of theſe valuable creatures. This malady being very contagious, the inſtant the Laplanders perceive any animals belonging to their flocks infected, they immediately diſpatch them. When diſſected, a frothy ſubſtance is found in their brains, and round their lungs; their inteſtines are lax and flabby; and the ſpleen is almoſt totally waſted.

Beſides the maladies natural to Rein-Deer, they are liable to many adſcititious evils. Bears, and other wild beaſts, often commit depredations on the herds; and the creature called the glutton, in particular, is the moſt dangerous and fatal enemy. The conteſts between theſe irreconcileable animals are not leſs frequent in North America than in Lapland; in the former of which countries the Rein-Deer is called the caribou, and the glutton the carcajou: this animal, which is not larger than a badger, frequently lies unobſerved, for whole weeks together, among the branches of ſome ſpreading tree; and, whenever the wild Rein-Deer is paſſing underneath, it inſtantly drops down, and fixes it's teeth and claws in the creature's neck. In vain does the wounded animal fly for protection to the thickeſt ſhades of the foreſt; the glutton ſtill maintains it's hold; and, though it frequently loſes ſome part of it's ſkin and fleſh by rubbing againſt the ſurrounding trees, it ſeldom relinquiſhes it's object till it has obtained a compleat victory.

Deer, Virginian. The Virginian Deer are about the ſize of the Engliſh Fallow-Deer, and of a light brown colour. Their tails are longer than thoſe of the Engliſh bucks; and they appear to be a diſtinct ſpecies, peculiar to America. They are gregarious as well as very reſtleſs animals; but they are not remarkable for their ferocity. Their fleſh, though arid, is of the utmoſt importance to the Indians, who dry it for their winter proviſion. Their ſkins form a valuable article of commerce, vaſt numbers of them being annually imported into Great Britain. In the northern parts of America, they feed, during the long and ſevere winters to which that climate is ſubject, on that kind of moſs which depends in long ſtrings from the trees. Their horns, which are ſlender, and bend greatly forwards, have numerous branches on their interior ſides; but they are deſtitute of brow-antlers. Theſe animals, which are tamed with great facility, may be trained to range the woods during the day, and to return to their owners at night.

Deer, Spotted Axis. The body of this animal, which is about the ſize of the Fallow-Deer, and of a light red colour, is beautifully marked with white ſpots; and along the lower part of the ſides, next the belly, there is a line of white. The tail, which is about the length of that of the Fallow-Deeer, is red above, and white beneath. The horns are ſlender, and triple-forked; the firſt branch riſes near the baſe, the ſecond near the top, and both point upwards.

The Spotted Axis Deer inhabits the banks of the Ganges, and the iſlands of Ceylon and Java. It is capable of enduring the rigours of an European climate, and has been known to breed in Holland. It is a very tame animal, and poſſeſſes the ſenſe of ſmelling in an exquiſite degree: and, though extremely fond of bread, it will not touch any that has been breathed on; a peculiarity alſo obſervable in ſome other animals.

Deer, Great Axis. This animal is of a reddiſh brown colour; and it's horns, which are trifurcated, very thick, ſtrong, rugged, and of a whitiſh hue, meaſure two feet four inches between tip and tip. Theſe kind of Deer inhabit the iſlands of Borneo and Ceylon; and, according to ſome naturaliſts, are as tall as horſes. The Dutch call them elanden, or elks. In Borneo, they are found in low marſhy places; for which reaſon they are called, in the Javan and Malayan tongues, Mejangan Banjoe, or water-ſtags.

There is another ſpecies of theſe animals of an

inferior ſize, furniſhed with rough and ſtrong triſurcated horns. They are of a light red colour, without any ſpots, but ſometimes varying to white; and are eſteemed very curious. They inhabit the dry mountainous foreſts of Ceylon, Borneo, Celebes, and Java, in large herds. In Java and Celebes, where they grow remarkably fat, there are uſually great hunting-matches; and numbers of them are frequently killed at one time. Their fleſh is cut into ſmall pieces, and dryed in the ſun.

DEER, PORCINE. The height of this animal, from the ſhoulders to the hoofs, is about two feet two inches; and it's length, from the tip of the noſe to the inſertion of the tail, is three feet ſix inches. It's horns, which are ſlender and trifurcated, are thirteen inches long, and ſix inches diſtant at the baſe. The head is about ten inches long; the body is thick and clumſy; the legs are fine and ſlender; and the tail is about eight inches in length. The upper parts of the neck, body, and ſides, are of a brown colour; but the belly and rump are lighter. This animal, which derives it's name of Porcine, or Hog-Deer, from the extraordinary thickneſs of it's body, has been occaſionally imported into this country from India; and it is alſo found in the iſland of Borneo.

DEER, RIB-FACED. This ſpecies is ſo called from having three longitudinal ribs, which extend from the horns to the eyes. The horns, which are placed on a bony projection, are elevated three inches above the ſcull, and covered with hair; they are alſo trifurcated, the upper fork being hooked; and from the upper jaw on each ſide there hangs a kind of tuſk. This creature bears a pretty ſtrong reſemblance to the Porcine Deer, and is ſomewhat ſmaller than the roe-buck. It is a native of Java and Ceylon; and, in the Malayan tongue, it is called kidang. Theſe kinds of Deer are very numerous in thoſe countries; and their fleſh is much eſteemed for it's delicacy and flavour.

DEER, TAILLESS. The colour of this animal reſembles that of the roe-buck; and it's whole coat, which is exceſſively thick, appears quite rough and erect in the ſpring ſeaſon. The horns are trifurcated, and very rugged at their baſes; the hair about the eye-lids and orbits is long and black; the ears are internally covered with a very thick fur; the noſe is black; and a broad cutaneous excreſcence above the anus ſupplies the want of a tail.

Theſe animals are very common in all the temperate parts of Ruſſia and Siberia, eſpecially the ſhrubby mountainous tracts beyond the Wolga; and alſo in the mountains of Hyrcania. At the approach of winter, they deſcend into the open plains, and their hair at that ſeaſon aſſumes a hoary appearance. The Perſians denominate this ſpecies of Deer the ahu; the Tartars, the ſarga; and it is at preſent conſidered as the Scythian antelope by the inhabitants of the Ruſſian empire.

DEER, MEXICAN. This creature is about the ſize of the European roe; the colour of it's hair is reddiſh; and, when young, it is ſpotted with white. It has ſtrong, thick, rugged horns, bending forwards, ten inches long, and nine between point and point. The head is large; the neck is thick; and the eyes are full and bright.

This ſpecies, which inhabits Mexico, Guiana, and Brazil, is found not only in the interior parts of theſe countries, but alſo on the borders of their plantations. It is very diſtinct from the roe of the old continent; and it's veniſon is inferior to that of Europe.

DEER, GREY. This ſpecies ſeems to be very obſcure; nor are naturaliſts agreed whether it is a Deer, a muſk, or a female antelope; eſpecially as the animals of this kind mentioned by Linnæus are deſcribed as having no horns. It is of a grey colour, and about the ſize of a cat; a line of black appears between the ears, and a large black ſpot above the eyes; and there is a line of the ſame colour on each ſide of the throat, pointing downwards. The middle of the breaſt is black; the fore-legs, and the ſides of the belly as far as the hams, are marked with black; the ears are long; and the under-ſide of the tail is black.

DEMOISELLE OF NUMIDIA. This bird receives it's name from it's particular actions in walking, which (by it's frequent leaping and turning round, and varying the motion of it's head at the ſame time) reſemble dancing. According to the Royal Academy at Paris, it meaſures three feet and a half from the tip of the bill to the end of the feet, when extended; but the ingenious Edwards, who has given a very accurate deſcription of it from the life, ſays that it appeared to him to exceed the Pariſian meaſure. Conſidered as a bird of the crane kind, the bill is ſhort, and terminates in a point, the thicker part next the head is greeniſh, in the middle it gradually becomes yellow, and the point is red; the irides are of a ſhining red colour; and the head and upper part of the neck are black, except the crown, which is grey. Exactly behind the eye there is a tuft of long, ſoft, white feathers, tending backwards, and depending behind in a very graceful manner. The fore-part of the neck is covered with ſoft, long, and ſlender black feathers, which fall on the breaſt in a very pleaſing form, ſometimes cloſe, and at others detached like a lady's handkerchief. The hind-part of the neck, the whole body, the wings, and the tail, are of a blueiſh aſh-colour, except the greater quills, which are duſky, or rather black; and the tips of the tail-feathers are alſo blackiſh. The legs are pretty long; the feet are of a moderate ſize, and entirely covered with dark or blackiſh ſcales; the claws are black; and the legs are deſtitute of feathers a conſiderable way above the knees.

DENTALE. An Italian fiſh ſomewhat reſembling the ſea-bream, though thicker and longer in proportion to it's ſize. The head is depreſſed; the ſnout is oblong; the back is ſharp, and of a dirty yellowiſh green colour; and, in thoſe which are large, ſometimes purpliſh, ſprinkled with bright blue and black ſpots, which likewiſe appear on the ſides. There is a row of teeth in each jaw, of which four are more conſpicuous than the reſt, and reſemble canine teeth; from which circumſtance this fiſh has received it's name. The eyes are large, and encircled with golden irides. The Dentale is very common in the markets of Venice and Rome, and generally weighs about three or four pounds.

DENTALIA. A genus of univalve ſhells; which may be defined, ſimple tubular ſhells, of a regular, determinate, curved, conical ſhape, and open at both extremities. The animal is a terebella. The common Dentalium, which is ſlender, and about an inch and a half long, is found on moſt parts of the Britiſh coaſts.

The ſpecies in this family are but few; and none of the foſſil kinds are different from the recent. The genuine Dentalium, as deſcribed by Tournefort, is of a tubular or conical form, about three inches long, of a ſhining greeniſh white colour, hollow,

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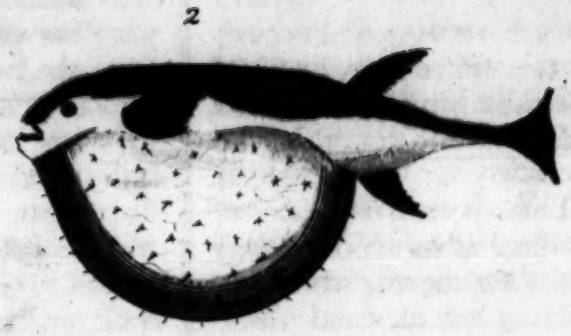
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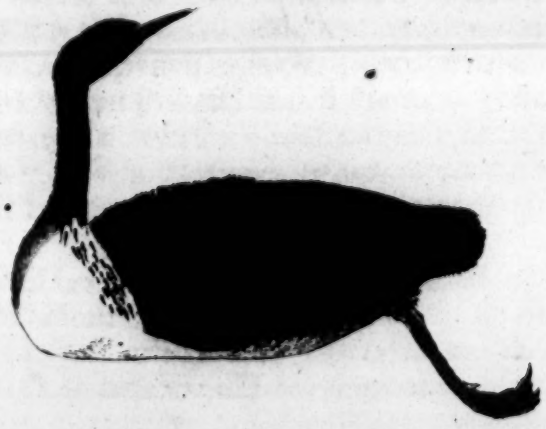
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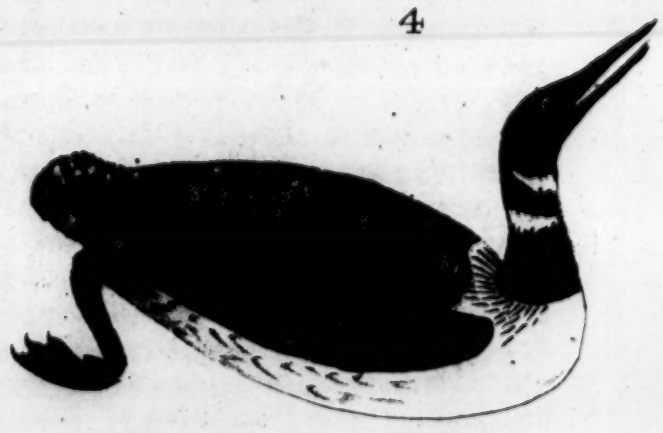
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1. DEMOISELLE OF NUMIDIA. 2. GLOBE DIODON. 3. SHORT DIODON. 4. NORTHERN DIVER. 5. PURPLE-THROATED DIVER. 6. RED-THROATED DIVER. 7. BLACK AND WHITE DOBCHICK. 8. NORTH-AMERICAN HORNED DOBCHICK.

Plate XLII. Published as the Act directs, by Harrison & Co. Aug. 6. 1785.

hollow, light, and longitudinally divided by parallel lines running from top to bottom. It is about the thickneſs of a quill, and ſomewhat reſembles a dog's tooth.

Dr. Liſter, in the Philoſophical Tranſactions, mentions two ſpecies of Dentalia; one of which is commonly found about the ſhores of the iſle of Guernſey, being a long, ſlender, white tube, ſomewhat bending and tapering, and open at both ends; and the other ſpecies, which is properly called entalium, is longer and thicker than the former, and ſulcated; whence the Italian term intaglia.

The Dentalium, called alſo the ſyringites, taken internally, is uſed as an alkali in ſweetening acids, and in ſtopping the dyſentery and ſpitting of blood. It is alſo adminiſtered externally as an abſorber of moiſture.

DENTEX. A fiſh caught in the Mediterranean ſeas in great plenty, and common in the Italian markets. See DENTALE.

DENTICULI ELEPHANTIS. An appellation given by ſome authors to the dentale, a ſhell of the tubulus marinus kind, which bears a diſtant ſimilitude to an elephant's tuſk. See DENTALIA.

DEPONA. A Mexican ſerpent, having a very large head and ſtrong jaws. The mouth is furniſhed with cutting, crooked teeth; among which there are two longer than the reſt, placed in the fore-part of the upper jaw, but eſſentially different from the fangs of the viper. Round the mouth there is a broad ſcaly border; the eyes, which are very large, give the creature a formidable appearance; the forehead is covered with large ſcales, above which there are other ſmaller ones curiouſly arranged: the ſcales are greyiſh on the back, along which runs a double chain, whoſe extremities are united in the manner of a buckler. Both ſides of the belly are marbled with large ſquare ſpots of a cheſnut colour, and in the middle of each there is a round yellow dot. This ſerpent flies from the human ſpecies, and is ſeldom known to do any miſchief.

DERMESTES. A genus of inſects of the order of coleopteræ, the antennæ of which are clavated and perfoliated tranſverſely. There are ſeveral ſpecies of this claſs, but they are frequently confounded with the ſcarabæi, or beetles.

DERMESTES, BLACK. This inſect has a white ſpot on each of the caſes of the wings; the body is ſmall, black, and of an oval ſhape; and the legs and feelers are alſo black. It frequents houſes and old walls; and, when touched, or alarmed by any noiſe, it draws it's head and legs under the ſhell of the body.

DERMESTES, CYLINDRICAL. This ſpecies has a thick hairy neck, and teſtaceous caſes for the wings: theſe caſes are longiſh, blunt at their points, and of a whitiſh brown colour; but the body and legs are black. The antennæ, or feelers, are reddiſh. This inſect is not much larger than a louſe; and, when moleſted, it contracts itſelf, and remains motionleſs. It is very common in houſes.

DEVIL, SEA. A very hideous fiſh of the ray kind, the fleſh of which is reckoned a deadly poiſon. It is about four feet long, and broad in proportion. On it's back there is a kind of bunch, covered with thorns or prickles like thoſe of the hedge-hog; and the ſkin, which is hard, unequal, rough, and black, riſes into various ſmall prominences, between which there are ſmall black eyes. The mouth is extremely wide, and armed with ſeveral very ſharp teeth, two of which are crooked like thoſe of the wild boar. It is furniſhed with four fins, and a broad forked tail; but it receives the name of Sea-Devil from two ſharp black horns over the eyes, which bend towards the back.

DEVIL, SEA, OF GUINEA. This fiſh, which is about twenty-five feet long, and eighteen broad, has four eyes. On each ſide riſes an angular ſubſtance of a corneous nature, and very ſharp; the tail is extremely long, and terminates in a dangerous point; the back is covered with ſmall excreſcences, two inches high, and ſharp at the ends; the head is enormouſly large; the mouth is armed with flat cutting teeth; two of the eyes, which are round and large, are ſituated near the throat; and the other two are ſmall, and placed over them. On each ſide of the throat there are three horns of equal lengths, about three feet long, and an inch and a half in diameter; but, being flexible, they are incapable of doing much injury. The fleſh is tough and ill-flavoured, and by no means proper for food.

DEW-WORM. A genus of worms having ſlender annulated bodies, furniſhed with lateral pores. The common Dew-Worm has an hundred and forty rings; the head is taper; the mouth is round at the extremity; the fore-part of the animal is cylindric, and the reſt depreſſed; at nearly one-third of the length, there is a prominent annulated belt; and a row of minute ſpines extend on each ſide of the belly, which aſſiſt the creature's motion.

DEW-WORM, LESSER. This worm is a variety of the former, and differs chiefly from it in ſize. It inhabits the common ſoil, which it renders apt to receive the rain by it's repeated perforations. It feeds on the cotelydons of plants, or part of the vegetating ſeed, during the day; and at night crawls abroad, and copulates with the female.

Worms of this ſort afford no inconſiderable ſuſtenance to moles, hedge-hogs, and various ſorts of birds.

DEW-WORM, INTESTINAL. This ſpecies lives in the leſſer inteſtines of the human ſpecies, particularly thoſe of infants; and does not eſſentially differ from the other kinds.

DEW-WORM, LUG. This inſect has a round mouth; and a circular body annulated with greater and leſſer rings, on each of which there are two tufts of ſhort briſtles placed oppoſite. The tail-part is ſmooth; and very curious ramifications iſſue from among the tufts in the living worm, which is ſoft, and full of blood.

This ſpecies inhabits ſandy ſhores, where it buries itſelf deep; but it's retreat is eaſily diſtinguiſhed by a little prominence, with an aperture on it's ſurface. It is much eſteemed as a bait for fiſh.

DIABE. A prickly ſea-fiſh of the orbis or globe fiſh kind, exactly reſembling the porcupine, except that it's ſpines or prickles are all fixed into it's ſkin by three inſertions.

DICROTUS. A term uſed by the ancients to expreſs the deer or ſtag when in it's third year's growth. By the ancient Greeks, it was called nebus in it's firſt year, puttolea in it's ſecond, dicrota in it's third, and ceraſtes ever afterwards.

DIDAPPER, DIPPER, or DOB-CHICK. This bird meaſures about ten inches in length, and ſixteen in breadth; and weighs from ſix to ſeven ounces. The head is thick ſet with feathers, which in old birds are of a bright bay colour on the cheeks; the top of the head, the whole upper ſide of the body, the neck, and the breaſt, are a deep brown,

brown, tinged with red; the greater quill-feathers are duſky, and the interior webs of the leſſer are white; the belly is cinereous, mixed with a ſilvery white and a tinge of red; the wings are ſmall; and the legs, which are a duſky green, are placed ſo far behind, that the bird walks with difficulty, and very ſeldom attempts to fly: however, it meets with ſafety in diving; which act it performs with great velocity, and poſſeſſes the faculty of remaining a conſiderable time under water. This fowl, which ſubſiſts principally on fiſh and aquatic plants, forms it's neſt on the banks of rivers and lakes in the water, without any faſtening, ſo that it floats in the ſtream. It lays five or ſix eggs of a white colour, which the bird always covers after quitting it's habitation. Notwithſtanding the riſing of the water into the neſt keeps the eggs conſtantly wet, the natural warmth of the animal brings on a fermentation in the vegetables; which being a full foot in thickneſs, make a comfortably warm bed, that aſſiſts the dam in hatching her brood.

DIDELPHIS. The Linnæan name for the animal called by other writers philander. In the above celebrated naturaliſt's ſyſtem of zoology, this creature is alſo a diſtinct genus of animals of the order of feræ, and claſs of mammalia; the diſtinguiſhing characters of which are, that they have ten upper fore-teeth, and eight lower, the two intermediate ones being very ſhort; that the laniarii are long, and the molares denticulated; and that they have alſo a ſmall bag or pouch under the belly. See OPOSSUM.

DIEBEL. An appellation given by Kentman and others to the capito or chub. It is properly a ſpecies of the cyprinus. See CAPITO and CYPRINUS.

DIODON. A very curious genus of fiſhes, having a very deep body, which appears as if amputated in the middle. The mouth is ſmall; and there are only two teeth in each jaw. Rondoletius has given this claſs of fiſhes the ſynonym of orthragoriſcus, probably conſidering it as the ſame which Pliny intended by that name; but the account left by that naturaliſt is ſo ſhort, that it is difficult to determine to what fiſh it is to be referred.

DIODON, OBLONG. This ſpecies, called alſo the ſun-fiſh, grows to a vaſt ſize. That deſcribed by Salvian weighed upwards of one hundred pounds; and Dr. Borlaſe mentions one caught at Plymouth in 1734, which was five hundred weight. The Oblong Diodon, in ſhape, bears ſome reſemblance to the bream, or to ſome deep fiſh cut off in the middle. The mouth, which is very ſmall, contains only two broad teeth in each jaw, having ſharp edges; the eyes are ſmall, and before each there is a ſmall ſemilunar aperture; the pectoral fins are very minute; the dorſal and anal fins are elevated, and placed at the extremity of the body; and the tail, which is narrow, fills all the abrupt ſpace between thoſe two fins. The back is duſky, and mottled; the belly is ſilvery; and between the eyes and the pectoral fins there are certain ſtreaks which point downwards. The ſkin, which is deſtitute of ſcales, when boiled, turns to a glutinous jelly reſembling cold boiled ſtarch; and, on being applied to paper or leather, anſwers all the purpoſes of glue. This creature lives on ſhell-fiſh; and it's fleſh is ſo unuſually rank, as to be totally unfit for food.

DIODON, SHORT. This ſpecies differs from the former in the ſhortneſs and deepneſs of it's body; in the back and anal fins being higher; and in the aperture to the gills not being ſemilunar, but oval. It was caught off Penzance, and is mentioned by Dr. Borlaſe in his Natural Hiſtory of Cornwall. However, though it is ſometimes found on the weſtern coaſts of this kingdom, it is more frequently ſo in the warmer climates of Europe.

DIODON, GLOBE. The length of this fiſh is about one foot ſeven inches; and the whole circumference, when diſtended, is two feet ſix. The form of the body is uſually oblong; but when the creature is alarmed, it poſſeſſes the power of inflating it's belly to a globular ſhape of great ſize. Nature ſeems to have endued the Globe Diodon with this property as a defence againſt fiſh of prey, as they are thereby prevented from laying hold of it with facility, and are likewiſe terrified by the vaſt numbers of ſpines with which that part is armed, and which it is capable of erecting at pleaſure. The mouth is ſmall; the irides are white, tinged with red; and the back, from the head to the tail, is almoſt ſtraight, and of a rich blue colour. The dorſal fin is placed low on the back, the anal being oppoſite; the tail is nearly divided by an angular projection in the middle; and there are no ventral fins. The tail and fins are brown; and the belly and ſides are white, corrugated, and beſet with an infinite number of ſmall ſharp ſpines adhering to the ſkin by four proceſſes.

This ſpecies is common to Europe and America; but only one ſingle ſpecimen has been diſcovered in our ſeas, and that near Penzance in Cornwall.

DIOMEDE BIRD. A fowl of the web-footed kind; having a ſlender beak, hooked at the end; and it's hinder toe being unconnected with the membrane which unites the reſt. It is of the ſize of the common hen, but it's neck and legs are much longer. It's colour is duſky, and ſomewhat browniſh; and under the belly there is a ſmall portion of white. The beak is a fine red; and in ſome yelloviſh, with a black tip. It is found in the Inſula Diomedia, now called Tremiti, in the Adriatic Sea; and is ſaid to be peculiar to that iſland.

DIOMEDIA. The Diomedia, in the Linnæan ſyſtem, forms a genus of anſeres, with a ſtraight bill; the upper mandible being hooked at the extremity, and the lower truncated. It includes the albatroſs and Magellanic gooſe.

DIPPER. A genus of ſhells of a ſuboval figure, ſmooth, furniſhed with an oblong aperture, and having one end a little convoluted. The incloſed animal is a ſlug. See BULLA.

DIPSAS. A ſpecies of ſerpent, the bite of which is of ſo malignant a nature, as to produce a mortal thirſt; from which circumſtance this reptile has received it's name. It is found in Africa, and ſome other countries.

DIPTERA. An order of inſects having only two wings; under each of which there is a ſtyle or oblong body, terminated by a protuberance or head called a balancer. The appellation is derived from Dis, Two; and Pteron, a Wing.

DISCOIDES FIBULA. A genus of the echinodermata, or ſea hedge-hogs; the periphery of the baſe of which is exactly round, and the body of a convexo-concave figure. The principal ſpecies of this genus is the ſubuculus; which has ſometimes a roſaceous top, the lines being very neat and elegant; at other times, a plain and ſmooth top; ſometimes it is entirely covered with very minute and ſmall ſtriæ; and ſometimes it is much more depreſſed than at others.

DIVER.

DIVER. A genus of aquatic birds; the characters of which are theſe: the bill is narrow, ſtraight, and ſharp; the upper mandible is longeſt, the edges of each bending inwards; the noſtrils are linear; the head is ſmall; the tongue is pointed, long, and ſerrated near the baſe; the wings are ſhort; the feet are placed far backwards on the body, and near the tail, which is ſhort, and conſiſts of twenty feathers; the legs are broad and flatted; and the claws are wide and depreſſed. Of this fowl there are ſeveral ſpecies.

Diver, Northern. This bird meaſures about three feet and a half in length, and four feet eight inches in breadth. The bill is black and ſtrong, and to the corners of the mouth is four inches in length; the head and neck are a deep black, the hind-part of the latter being ſtreaked with a large white band ſhaped like a creſcent; exactly under the throat there is another band; and both are marked with black oblong ſtrokes pointing downwards. The lower part of the neck is a deep black, tinged with a rich purple gloſs; the under-ſide of the body is wholly white; the ſides of the breaſt are marked with black lines; and the back, the coverts of the wings, and the ſcapulars, are black, marked with white ſpots. The tail is very ſhort, and almoſt hid by the ſcapulars, which are duſky ſpotted with white; and the legs and toes are black.

Theſe birds, which inhabit the northern parts of this iſland, keep chiefly at ſea, and feed on fiſh; but naturaliſts are not agreed that they breed in this kingdom, which they are known to do in Norway, where there are many birds common to Scotland.

Diver, Immer, of Linnæus. This bird, which inhabits the ſeas about the Orkneys, in very ſevere winters migrates to the more ſouthern parts of Britain. It lives ſo uniformly at ſea, that ſome believe it never quits the water, and that it hatches it's young in an aperture formed by nature under it's wing for that purpoſe. With reſpect to ſize, it is larger than the gooſe; the head is duſky; and the back, the coverts of the wings, and the tail, are clouded with lighter and darker ſhades of the ſame colour. The primaries of the tail, as well as the legs, are black; and the breaſt and belly are ſilvery. The ſkin of this bird is ſo unuſually tough, that it has been uſed inſtead of leather in ſome of the northern regions.

Diver, Speckled. This fowl meaſures twenty-ſeven inches in length, and it's breadth is three feet nine inches; the bill is three inches, and turns a little upwards; and the mandibles, when cloſed at the points, do not meet at their ſides. The head is a duſky grey, marked with numerous white ſpots; the hind-part of the neck is an uniform grey; the whole upper part of the body, and the greater coverts of the wings, are duſky, ſpeckled with white; and the leſſer coverts are duſky and plain. The tail is compoſed of nearly twenty feathers, which in ſome are tipped with white; the cheeks, and the whole under-ſide of the body, are a fine gloſſy white; and the legs are duſky.

Birds of this ſpecies frequent the European ſeas, lakes, and rivers, during the winter ſeaſon; and, near the Thames, they are called ſprat loons, becauſe they attend theſe fiſh during their continuance in that river.

Diver, Red-Throated. This bird breeds on the margins of lakes, in the northern parts of Scotland, where it lays two eggs. It weighs about three pounds; it's length is two feet, and it's breadth three feet five inches. The head, which is ſmall and taper, is of a fine uniform grey colour; the chin is of the ſame hue; the bill is ſtraight; the hind-part of the neck is marked with duſky and white lines pointing downwards; the throat is a dull red; the whole upper part of the body, the tail, and the wings, are a deep duſky grey; the under-ſide of the body is white; and the legs are duſky.

Diver, Purple-Throated. This ſpecies is about the ſize of the tame duck; the bill is black; the front is of the ſame colour; the hind-part of the head and neck are cinereous; the ſides of the neck are marked with black and white lines pointing downwards; and the fore-part is of a gloſſy variable purple, black and green. The back, the ſcapulars, and the coverts of the wings, are black, the two former being marked with ſquare, and the latter with round white ſpots; the quill-feathers are duſky; the breaſt and belly are white; the tail is ſhort and black; and the legs are partly duſky and partly reddiſh.

Diver, Newfoundland, or Loon. The expanſion of the wings of this very large ſpecies meaſures four feet; the bill, which is black and ſharp, is near five inches long, and terminates in a white point; the head and neck are a duſky brown; there is a white ſpot under the bill; and a circle of the ſame colour ſurrounds the neck, below which it is greeniſh. The primaries are black, except the exterior edges, which are white; the breaſt and belly are nearly of the ſame colour; the covert-feathers of the wings and back are irregularly ſpotted with white; the exterior toe is near five inches long; and the feet are webbed, in common with all the genus.

DOB-CHICK, or DIDAPPER. An aquatic fowl of the diver kind, known among authors by the name of colymbus minor, and called by Linnæus colymbus auritus. It ſeldom exceeds ſix ounces in weight; the beak is ſhort, large at the baſe, and taperingto the point; the eyes are large; and the wings are ſmall. This bird, which is not furniſhed with a tail, is covered with a thick downy plumage, of a very deep blackiſh brown on the back, but white on the belly.

The Dob-Chick is of ſuch a ſtructure that it moves with more facility under the water than on it's ſurface. It raiſes itſelf from that element with great difficulty; but, when it has once gained the air, it is capable of continuing it's flight for a conſiderable time. It forms it's neſt, near the banks of lakes or rivers, of vegetables; the fermentation of which, occaſioned by the natural warmth of the bird, hatches the eggs, even though the water invades the neſt, and thereby keeps them in a conſtant ſtate of humidity.

Dob-Chick, Black and White. This ſpecies is about the ſize of the teal. The bill is ſtraight, ſharp at the point, and of a black colour, except the edges of the upper mandible, and the root or baſis of the lower, which are red. The circle round the eye is a bright red; a bare ſkin, of a fine deep red colour, paſſes from the ſide of the upper bill to the eye; and above this ſkin, on each ſide, there is a white ſpot. The top of the head is black, with a greeniſh gloſs; the upper ſide of the neck, the back, the rump, and the wings, are a pretty deep black; but the latter are edged with white about the ridges or joints; and the tips of the middle quills, which are white, form a tranſverſe bar. The covert-feathers on the inner ſides of the wings are white; the under-ſides of the head

and neck are white, as well as the ſides and belly, except that ſome black ſpots appear near the inſertions of the legs, which are placed at the extremity of the body; and, together with the feet, are of a purpliſh fleſh-colour internally, and a dirty green externally. The toes, which are four in number, are all disjoined; but they have lateral fins on each ſide, and broad flat claws reſembling the nails of the human ſpecies. The hind-parts of the legs are ſerrated; and the toes are ſo formed with their webs, as to ſhut in the manner of a fan, that they may be drawn with more facility through the water, and opened again whenever the creature ſtrikes. This bird has not the leaſt appearance of a tail.

Dob-Chick, Eared. This bird has a ſtraight, ſharp-pointed bill, of a black colour, except the tip of the lower mandible, which is whitiſh; the irides are red; and from behind the eyes, on each ſide, proceeds a tuft of long looſe feathers of a reddiſh yellow colour, which either falls on the ſides of the neck, or flows backward, according to the motion of the bird. The head and neck are black; the whole upper ſide is a blackiſh brown, except a little white about the joints and tips of the middle quills; the breaſt, belly, and inner coverts of the wings, are white; where the colours of the upper and lower parts of the body are blended, a line of a yellow reddiſh colour extends the whole length of the bird; and the legs and feet are of a dirty green hue.

Dob-Chick, Horned North American. This ſpecies, which is of the ſize of the teal, has ſmall wings, and large legs and feet in proportion to it's body. The bill is an inch and a quarter long, ſharp-pointed, and white at the tip; and the noſtrils are placed in furrows. From the corner of the mouth to the eye there is a bare ſkin of a red colour; the head is covered with long black feathers of a ſhining green gloſs; behind the head runs a line of long looſe yellowiſh orange feathers, which hang a little downward, and form a kind of creſt; the hinder part of the back and neck are of a blackiſh brown hue; and the fore-part of the neck and beginning of the breaſt are a reddiſh orange, which turns a little white on the breaſt. The whole belly is a gloſſy white, with an admixture of dirty orange; the legs, which are flat and broad, are placed at the extremity of the body; the thighs are ſo confined within the ſkin, that they cannot be moved backwards and forwards; and the toes, which have ſtiff webs, are furniſhed with nails like thoſe on the fingers of a man. This bird, which ſeems to be deſtitute of a tail, was brought from Hudſon's Bay.

Dob-Chick, Greater. This bird inhabits the Lake of Geneva; though, if we may credit the ingenious Edwards, it has ſometimes been ſeen in England alſo. The bill is fleſh-coloured, and duſky at the tip; the top of the head, a mark on the ſide of the neck, and a line between the bill and the eye, are black; the hinder part of the neck, the back, rump, and upper ſides of the wings, are cinereous, except that there is a border of white in the middle of the wing, and that the middle quills are white; and the inſides of the wings are white, the quills being of a light aſh-colour. The underſide of this bird, from the throat to the extremity of the body, is covered with fine white feathers of a ſattin or ſilvery gloſs; the legs and feet are a duſky green; and, like all the reſt of the genus, this bird is deſtitute of a tail. The toes are not webbed together; but have firm lateral membranes of a tolerable breadth extended on their ſides; the nails are flat; and the entire conſtruction of the legs ſeems perfectly adapted for the aquatic life of the animal. This ſpecies is about the ſize of the common duck.

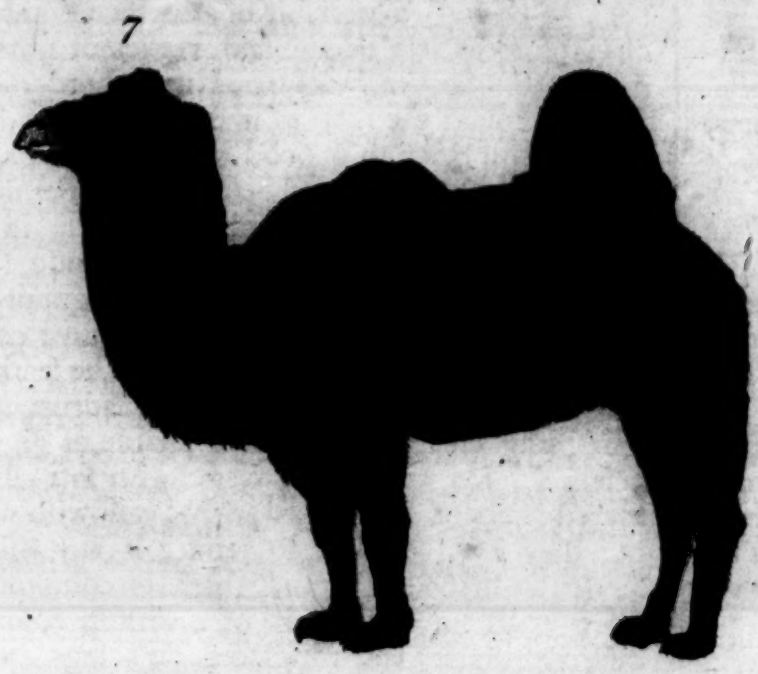
DOBULA. An appellation given by ſome naturaliſts to the chub. It has been called capito and cephalus by the moderns, and ſqualus by the ancients; but it ſeems to require no genuine name, being properly only a ſpecies of cyprinus. See Cyprinus.

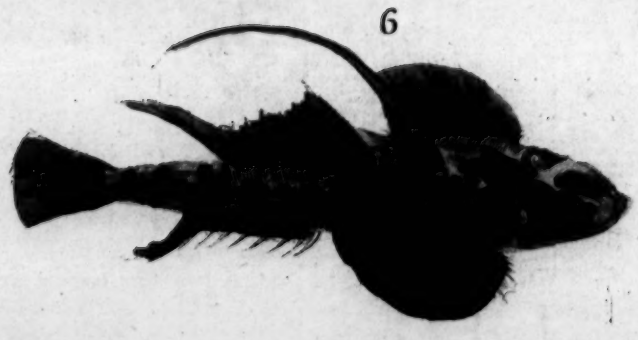
Dobula is alſo a term expreſſive of a freſh-water fiſh of the leuciſcus or dace kind; but it is larger, thinner, and better taſted. It is caught in the freſh-water lakes of Germany, and in thoſe of ſome other countries.

DODO. A very large and curious bird, called by ſome authors cygnus cucullatus; by others, gallus gallinaceus peregrinus; and, by Bontius, dronte. It's appearance, inſtead of exciting an idea of ſwiftneſs, the common attribute of birds in general, ſeems to ſtrike the imagination as ſomething the moſt unwieldy and inactive in nature; it's body, which is maſſive, almoſt round, and covered in general with grey feathers, is barely ſupported on two thick legs like pillars, while it's head and neck riſe from it in a manner truly groteſque. The neck, thick and purſy in itſelf, is joined to a head compoſed of two great chaps, opening far behind the eyes, which are large, black, and prominent; ſo that the animal, in gaping, exhibits to view a moſt enormous mouth: hence the bill is of an extraordinary length, thick, ſharp at the end, and having each chap crooked in oppoſite directions; and the two mandibles, which are of a blueiſh white colour, in ſome meaſure reſemble two ſpoons laid back to back. The reſult of all which combined circumſtances is a ſtupid and voracious phyſiognomy, ſtill farther heightened by a bordering of feathers round the root of the beak, which bears ſome reſemblance to a hood or cowl, and finiſhes this unmeaning picture of deformity. Magnitude, which in other animals implies ſtrength, in this only contributes to inactivity. The Dodo ſeems to be ſo weighed down by it's own gravity, as ſcarcely to poſſeſs ſtrength ſufficient to give energy to it's motions; and it appears among the feathered tribe, what the ſloth does among quadrupeds, an unreſiſting creature, equally incapable of flight or defence. It's wings are covered with ſoft aſh-coloured feathers, intermixed with a yellowiſh white, but they are too ſhort to render it any eſſential ſervice in flying; it's tail, which is compoſed of a few ſmall curled feathers of a whitiſh colour, is diſproportionate and miſplaced; it's legs are too ſhort to aſſiſt it in running; and it's body is exceedingly clumſy. In ſhort, this animal does not inaptly convey an idea of the tortoiſe dreſſed up in the feathers of a bird; and, though thus furniſhed with the means of flying, ſeems only ſtill the more unwieldy.

The Dodo is a native of the Iſle of France; and the Dutch, who firſt diſcovered it there, are ſaid to have termed it the nauſeous bird, as well from it's diſguſting figure, as from the diſagreeable taſte of it's fleſh: however, ſucceeding obſervers contradict this report, and aſſert that it's fleſh is good and wholeſome food. Being a very ſimple and ſluggiſh bird, as is pretty obvious from it's figure, it conſequently becomes an eaſy prey to the fowler.

Naturaliſts ſeem to be divided in their opinions, whether





1. DODO. 2. DOG - FISH. 3. DOREE. 4. DOTTEREL. 5. DRAGON - FLY. 6. DRAGONET.
7. DROMEDARY.

Plate XLI. Published as the Act directs by Harrison & Co. July 30. 1785.

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whether this bird, and that deſcribed by ſome authors under the appellation of the bird of Nazareth, are one and the ſame. They are unqueſtionably both natives of the ſame country; they are equally incapable of flight; and the form of the wings and body in both are ſimilar. Nevertheleſs, they differ very eſſentially; for the plumage of the bird of Nazareth is deſcribed as being exceedingly beautiful; and it's legs are delineated as being much longer than thoſe of the Dodo.

DOG. A large genus of quadrupeds, furniſhed with ſix cutting teeth, and two canine ones in each jaw; having five toes before, and four behind; and the tail bending towards the left, the uſual characteriſtic of the entire genus, and firſt diſcovered by Linnæus. Theſe carnivorous quadrupeds are neither ſo numerous, powerful, treacherous, rapacious, nor cowardly, as thoſe of the cat kind, which they ſeem to follow in the chain of nature. They may be diſtinguiſhed by their claws, which have no ſheaths, as in the feline tribe. The noſe and the jaws of the Dog are alſo longer than thoſe of the cat; and the body is more ſtrongly made in proportion, and covered with hair inſtead of fur. If we compare the natural habitudes of theſe two claſſes of animals, we ſhall find that the Dog kinds are not ſo ſolitary as thoſe of the cat, but delight to hunt in company, and to encourage each other by their mutual cries. In this manner the Dog and the jackall purſue their prey; and the wolf and the fox, though more ſolitary and ſhy in populous countries, in regions where they are leſs perſecuted, and can diſplay their natural propenſities without fear, they are obſerved to keep together in packs, and purſue their game with alternate howlings. Though inferior to animals of the cat kind in the faculty of climbing, they infinitely exceed them in the ſenſe of ſmelling, by which alone they can purſue their prey with certainty of ſucceſs, wind it through all it's mazes, and tire it out by perſeverance. It often happens, however, in their ſavage ſtate, that their prey is either too much diminiſhed, or that the animals of which it conſiſts are too wary, to afford a ſufficient ſupply: in which caſes all the Dog kinds can ſubſiſt for a conſiderable time on fruits and vegetables.

Of all the canine tribe, the Dog claims the preference, being the moſt intelligent of all known quadrupeds, and the acknowledged friend of mankind. Independent of the beauty of his form, his vivacity, force, and ſwiftneſs, he is poſſeſſed of all thoſe native qualities which generally conciliate the affections of the human ſpecies. A natural courage and ferocious diſpoſition render the Dog in his ſavage ſtate a formidable enemy to all other animals; but theſe qualities ſpeedily yield to very different ones in the domeſtic Dog, whoſe only ambition ſeems to be the deſire of pleaſing: he approaches with a timid reſpect, and lays his ſtrength, his courage, and all his uſeful talents, at the feet of his maſter; he waits his orders, to which he renders implicit obedience; he conſults his looks, and a ſingle glance is ſufficient to put him in motion. He is faithful beyond any example to be found among the human race; he is conſtant in his affections, friendly without intereſt, and grateful for the ſlighteſt favours; he retains the ſenſe of benefits conferred longer than that of injuries received; he is not diſguſted by a ſlight degree of harſhneſs, but continues humble, ſubmiſſive, and ſuppliant, under his owner's diſpleaſure: his ultimate wiſh is that of being ſerviceable, his only fear that of diſpleaſing; he licks the hand that has juſt been lifted up to ſtrike him; and eventually diſarms reſentment by unwearied ſubmiſſion.

Hiſtory, ſays Pope, is more replete with examples of the fidelity of Dogs than of friends; and indeed an attentive obſervance of theſe animals might afford inſtructive leſſons of rectitude, patience, forbearance, and fidelity, even to the reputed lords of the creation. More docile than the human ſpecies, as well as more obedient than any other animal, the Dog not only receives inſtruction in a very ſhort time, but alſo conforms to the diſpoſitions and manners of thoſe who command him; and his behaviour is modified after that of the family where he lives. Always aſſiduous in the ſervice of his maſter, he is ever a friend to his friends, but indifferent towards others, ſetting himſelf openly againſt ſuch as are dependent like himſelf. He forbids the approach of a beggar, whom he diſcovers to be ſuch either by his cloaths, his voice, or his geſture. When the care of the houſe is committed to him, he ſeems ambitious of the charge; continuing a faithful centinel, going his rounds, ſcenting ſtrangers at a diſtance, and giving every indication in his power that he is intent on his duty. If any perſon attempts to intrude on his territories, he becomes unuſually fierce, threatens, flies at him, fights, and either conquers alone, or alarms thoſe for whom he contends.

From hence we may ſee of how great importance this animal is to us in a ſtate of nature. Had the ſpecies never exiſted, how could man, without the aſſiſtance of the Dog, have been able to conquer, tame, and reduce to ſervitude, every other animal? and how could he have diſcovered, chaced, and deſtroyed, thoſe creatures which were noxious to him? In order to his ſecurity, and to conſtitute him the undoubted lord of animated nature, it was neceſſary for him to begin with conciliating the favour of a part of them; and to attach ſuch to himſelf, by kindneſſes and careſſes, as ſeemed fitteſt for obedience and aſſiſtance. Thus the firſt art exerted by man conſiſted in ſecuring the favour of the Dog; and the reſult of this art was the conqueſt and entire poſſeſſion of the earth. Animals are in general endowed with more ſtrength, agility, and fleetneſs, than the human ſpecies; and their ſenſes (particularly that of ſmelling) are far more perfect. Having gained therefore a new aſſiſtant in the Dog, whoſe ſcent is ſo exquiſite, man as it were gained a new faculty, of which he was before entirely deſtitute.

The Dog, thus uſeful in himſelf, being admitted to a participation of empire, exerts a degree of ſuperiority over all other animals which ſtand in need of human protection. The flocks and herds obey his voice more readily even than that of the ſhepherd or the herdſman; he conducts them, guards them, confines them within their appointed limits, and conſiders their enemies as his own. Nor are his arts leſs ſerviceable in purſuit: when the ſound of the horn, or the voice of the huntſman, calls him to the field, he teſtifies his pleaſure by every little emotion; and purſues with perſeverance thoſe animals from which, when captured, he has no expectancy of reaping the ſmalleſt advantage.

All carnivorous animals naturally delight in hunting. The lion and the tiger, whoſe power is ſo great as generally to enſure conqueſt, hunt alone, and without any regular deſign; but the wolf, the Dog, and the fox, purſue in companies, aſſiſt each other, and participate in the ſpoils. However, when

when culture has perfected this quality in the domeſtic Dog; when he has been taught to repreſs his ardour, to meaſure his motions, and not to exhauſt his ſtrength by too ſudden exertions, he then hunts with method and ſucceſs.

Though the wild Dog, with all his natural propenſities and habits, is at preſent utterly unknown, no ſuch animal being now found in any part of the world, there are many Dogs which, from a domeſtic ſtate, have become ſavage, and wholly purſued the dictates of nature. In thoſe deſerted and uncultivated regions where Dogs are found wild, they ſeem to be ſtrongly tinctured with the diſpoſition of the wolf; they unite in large bodies, and attack the moſt formidable enemies of the foreſt, ſuch as the cougar, the panther, and the biſon. In the continent of America, where they were originally introduced from Europe, and abandoned by their maſters, they have multiplied to ſuch a degree, that they are diſſeminated in packs over the whole country, indiſcriminately attacking all other animals, and frequently even man himſelf: and there they meet with the common fate of carnivorous animals, being killed wherever they happen to make their appearance. Yet, notwithſtanding their natural wildneſs, they are eaſily reclaimed; and, when treated with kindneſs and lenity, they quickly become ſubmiſſive, familiar, and faithful in their attachments. In this reſpect, they totally differ from the wolf or the fox; which animals, though taken ever ſo young, are gentle only while cubs; for, when advanced in age, they always betake themſelves to their natural appetites of rapine and cruelty. In a word, it may with truth be aſſerted, that the Dog is the only animal whoſe fidelity is not to be ſhaken; which knows his maſter and his friends; which inſtantly diſtinguiſhes ſtrangers; which obſerves his name, and anſwers to the call; which ſeems to underſtand the nature of ſubordination, and ſolicits aſſiſtance; which teſtifies his regret for the loſs of his maſter by complaint; which, when carried to any diſtant ſituation, can find his way home; whoſe native talents are evident, and whoſe education never proves fruitleſs when attentively cultivated.

As the Dog is of the moſt complying diſpoſition, ſo alſo he is the moſt ſuſceptible in the change of his form, the varieties of this animal being too numerous even for the moſt attentive deſcriber to enumerate. The climate, the food, and the education, all make ſtrong impreſſions on him, and produce alterations in his ſhape, colour, hair, ſize, and almoſt every thing except his nature. The ſame Dog, when tranſported from one climate to another, ſeems to become quite a different animal; but diſtinct breeds are almoſt as much ſeparated, in appearance, as any two animals the moſt diſſimilar in nature. Nothing appears to continue immutable with them, except their internal conformation: different in the figures of their bodies, the length of their noſes, the ſhape of their heads, the extent and direction of their ears and tails, the colour, quality and quantity of their hair, the natural marks only remain unaltered by which the ſpecies is diſtinguiſhed, and kept diſtinct from all other animals. It is this peculiar conformation, this faculty of producing an animal that can reproduce, which marks the kind, and approximates forms which at firſt ſight appear as if never intended for alliance.

Fom this ſingle conſideration, therefore, all the various ſpecies of Dogs may be pronounced of the ſame kind; but which of them is the original of all the reſt, and which the parent ſtock from whence ſuch a variety of deſcendants is derived, is a queſtion which the ableſt naturaliſt cannot ſolve with any degree of certainty.

It may be eaſily obſerved, that all animals which are under the influence of man are liable to great variations. Thoſe which have been ſufficiently independent to chuſe their own climate and nouriſhment, and to purſue their own propenſities, preſerve the original marks of nature, without much deviation; and it is probable that the firſt of theſe is, even after ſuch a lapſe of ages, well repreſented in their deſcendants. But thoſe which have been adopted by man, tranſported from one climate to another, and controuled in their manner of living, have alſo been changed in their forms: and the Dog in particular has felt thoſe alterations more ſtrongly than any other domeſtic animal; for, living more like man, he may be ſaid to live more irregularly alſo; and conſequently muſt have felt all thoſe changes which ſuch variety would naturally produce.

Various other cauſes may alſo be aſſigned for this variety in the ſpecies of the Dog: as he is perpetually under the eye of his maſter, where accident has produced any ſingularity in it's productions, man uſes all his arts to continue this peculiarity unchanged; either by breeding from ſuch as had thoſe ſingularities, or by deſtroying thoſe which happened to be deſtitute of them. Beſides, as the Dog produces much more frequently than ſome other animals, and lives a ſhorter time, ſo the chances for it's varieties preſent themſelves more frequently.

If the internal ſtructure of Dogs of different ſorts be compared with each other, it will be found that, except in ſize, they are in this reſpect exactly the ſame. This, therefore, affords no criterion by which to judge of the original animal. If other creatures be compared with the internal conformation of the Dog, the wolf and the fox will be found to have the moſt perfect reſemblance: it is probable therefore that the Dog, which moſt nearly reſembles the wolf, or the fox externally, is the original animal of it's kind; for it is reaſonable to conjecture, that as the Dog moſt nearly reſembles them internally, ſo he may approximate them alſo in external ſimilitude, except where either art or accident has altered his form. This poſition being allowed, if we advert to the number of varieties which are to be found in the Dog, that ſpecies called the ſhepherd's Dog will bear the ſtrongeſt reſemblance to the wolf or fox. Hence this ſeems to be the primitive animal of it's kind; and we ſhall be more confirmed in that opinion, if we attend to the different characters which climate produces in this animal, and the different races of Dogs which are propagated in every country. If we examine thoſe regions which are either in a ſavage ſtate, or but half civilized, where it is moſt probable that the Dog, like his maſter, has received but few impreſſions from art, we ſhall find the ſhepherd's Dog, or a ſimilar animal, ſtill exiſting. Such Dogs as have run wild in America and Congo, approach this form. Thoſe of Siberia, Lapland, Iceland, the Cape of Good Hope, Madagaſcar, Madeira, Calicut, Malabar, and Kamtſchatka, have all long noſes and pricked ears, and ſeem nearly allied to the ſhepherd's Dog. That of Guinea quickly aſſumes this appearance; for, at the ſecond or third generation, the animal forgets

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to bark; his ears and tail become pointed; and his hair drops off, while a coarſer and thinner kind ſupplies it's place. This ſort of Dog is alſo found in great abundance in the temperate climates; particularly among thoſe nations who, preferring utility to beauty, employ an animal which requires very little culture in order to it's being ſerviceable. Notwithſtanding this creature's deformity, as well as his melancholy and ſavage air, he is ſuperior to all the reſt of the kind in inſtinct; and, without the ſmalleſt inſtruction, naturally tends the flocks with an aſſiduity and vigilance at once pleaſing and aſtoniſhing.

In the more poliſhed and civilized countries, the Dog ſeems to partake of the univerſal refinement; and, like the natives, becomes more beautiful and majeſtic, as well as more capable of imbibing an education foreign to his nature. The Dogs of Denmark, Greece, and Ireland, are larger and ſtronger than thoſe of any other country. In France, Germany, Spain, and Italy, theſe animals, like the inhabitants, are of various kinds; and this variety ſeems to originate from croſſing the breed of ſuch as are imported from foreign climates. We may therefore conſider the ſhepherd's Dog as the primitive ſtock from whence all thoſe varieties are derived, eſpecially as he forms the ſtem of that genealogical tree which has been branched out into every part of the globe.

This animal, when among the inhabitants of the temperate climates, continues nearly in his original ſtate; but, when tranſported into more frigid regions, he grows diminutive and ugly: though in Iceland, Ruſſia, and Siberia, where the climate is leſs rigorous than in Greenland, and where the people are more civilized, he arrives at a more perfect ſtate. Whatever differences there may be among the Dogs of thoſe climates, they are not ſo conſiderable as to alter the general features of the ſpecies: they have all ſtraight ears, long thick hair, and a ſavage aſpect; and they bark leſs frequently than thoſe of the more cultivated kinds.

The ſhepherd's Dog, if tranſported into the temperate climates of England, France, and Germany, whoſe inhabitants are wholly civilized, will ſpeedily be diveſted of his ſavage air, his pricked ears, and his rough, long, and thick hair; and, from the ſingle influence of climate or food alone, will become either a matin, a maſtiff, or a hound. Theſe three ſeem to be the immediate deſcendants of the former; and from them the other varieties are derived.

The hound, the harrier, and the beagle, appear to be all of the ſame claſs; for though the female is covered but by one of them, her puppies bear ſome reſemblance to all the three. If this animal be tranſported into Spain or Barbary, where the hair of all quadrupeds aſſumes a ſoft and long texture, it will there be converted into the land-ſpaniel and the water-ſpaniel, and theſe of different magnitudes. If the grey matin-hound, which compoſes the ſecond branch, be tranſported to the north, it will there become the great Daniſh Dog; which laſt, if removed into ſouthern climates, will be converted into the greyhound, of various ſizes; and the ſame, if tranſported into the Ukraine, Tartary, Epirus, Albania, and Ireland, will become the great wolf Dog, ſo famous for it's ſpirit and ſize. If the maſtiff, which conſtitutes the third branch, and is chiefly a native of England, be removed to Denmark, it will there be changed into the little Daniſh Dog; which laſt, if ſent into the tropical climates, will be turned into the animal called the Turkiſh Dog without hair.

All the above races, together with their varieties, are produced by the influence of the climate, joined to the different food, culture, and protection, which they meet with among mankind; but all other kinds may be conſidered as mongrel generations, produced by the concurrence of theſe, and originating rather from croſſing the breed than attending to the individual. Theſe varieties being extremely numerous, and very different in diſtinct countries, it would be endleſs to enumerate them all: beſides, nothing but experience can aſcertain the reality of the conjectures already made, though they have ſo much the appearance of probability.

The varieties of Dogs in Great Britain are very numerous; which muſt naturally be the caſe in all countries where commerce is extenſive, and where wealth is apt to beget capricious predilection. In this iſland the ugliеſt, as well as the moſt uſeleſs of their kinds, are adopted merely on account of their ſingularity; and, being imported for no other purpoſe than to be looked at, they ſoon loſe even that ſmall degree of ſagacity which they poſſeſſed in their natural climates. From this importation of foreign uſeleſs Dogs, the native breed of this country is much degenerated; and the varieties now to be found are much more numerous than they were in the reign of Queen Elizabeth, when Doctor Caius attempted their natural hiſtory: ſome of thoſe deſcribed by him no longer exiſt; though many have been ſince introduced, neither ſo ſerviceable nor ſo beautiful as thoſe which have ſince that period been ſuffered to decay.

The above naturaliſt divides the whole race of Dogs into three ſorts. The firſt, being the generous kind, conſiſts of the tarrier, the harrier, the blood-hound, the gaze-hound, the grey-hound, the leymner, and the trembler, employed in hunting; the ſpaniel, the ſetter, and the water-ſpaniel or finder, uſed in fowling; the ſpaniel, and the gentle or lap-dog, for amuſement. The ſecond ſort, compoſed of the farm kind, conſiſts of the ſhepherd's Dog and the maſtiff. And the third, being the mongrel kind, conſiſts of the wappe, the turnſpit, and the dancer. To which varieties may now be added the bull-dog, the Dutch maſtiff, the harlequin, the pointer, and the Dane; together with a variety of lap-dogs, which being uſeleſs animals, are of courſe unworthy of particular appellations.

The Engliſh bull-dog is perhaps the moſt courageous of the kind; but all his boaſted exploits fall infinitely ſhort of thoſe recorded by Pliny of the Epirotic Dogs, or by Ælian of the Indian ones. The latter of theſe authors has furniſhed us with the following deſcription of a combat between a Dog and a lion; which, we apprehend, will not prove either uſeleſs or unentertaining to our readers.

'When Alexander was proſecuting his conqueſts in India, a grandee of that country was deſirous of ſhewing him the value of the Dogs which were there produced. Bringing his Dog into the king's preſence, he ordered a ſtag to be let looſe before him; which the Dog deſpiſing as an unworthy enemy, remained quite regardleſs of the animal, and never once ſtirred from his place. His maſter then ordered a wild boar to be let out; but the Dog ſeemed to think even this a deſpicable foe, and remained calm and regardleſs as before. He was next tried with a bear: but ſtill contemning

his enemy, he waited for an object more worthy of his courage and his ſtrength. At laſt a tremendous lion was produced; and then the Dog acknowledged his antagoniſt, and prepared for the combat. He inſtantly diſcovered a degree of ungovernable fury, ſeized him by the throat, and totally diſabled him from reſiſtance. On this the Indian, who was deſirous of ſurprizing the king, and trying the conſtancy and bravery of his Dog, ordered his tail to be cut off; which was performed without difficulty, as the intrepid Dog was engaged in holding the lion. He next ordered one of his legs to be broken; which, however, did not in the leaſt abate the ardour of the Dog, but he ſtill kept his hold as before. Another leg was then broken; but the Dog, as if unconſcious of pain, only preſſed the lion with more eagerneſs. In this cruel manner, all his legs were amputated, without abating his courage; and at laſt, when even his head was ſeparated from his body, the jaws ſeemed tenacious of their former hold. A ſight ſo cruel did not fail to affect the monarch with very ſtrong emotions, at once exciting pity for the Dog's fate, and admiration of his fortitude. On which the Indian, ſeeing him thus moved, preſented him with four Dogs of the ſame kind, which in ſome meaſure alleviated his ſolicitude for the loſs of the former.'

However, the breed of Dogs in India is at preſent greatly inferior to what the foregoing relation ſeems to imply; and in many places, inſtead of Dogs, the natives employ animals of the cat kind in their hunting-matches. In other parts of that vaſt continent alſo, this admirable and faithful animal, inſtead of being applied to his natural uſes, is only bred for the ſake of food. Throughout the extenſive empire of China, there are Dog-butchers, and ſhambles for the ſole purpoſe of vending their fleſh. At Canton, in particular, there is a whole ſtreet appropriated to that uſe; and, what is very extraordinary, whenever a Dog-butcher makes his appearance, all the neighbouring Dogs immediately purſue him in full cry, and perſecute him to the utmoſt of their power.

On the coaſt of Guinea, the fleſh of Dogs is eſteemed ſo great a delicacy by the negroes, that they will readily exchange a cow for a Dog: however, by this uncivilized race of human beings ſcarcely any living creature is ever rejected. It may indeed happen that the fleſh of this animal, which is ſo indifferent in the temperate climates, may aſſume a ſuperior quality in thoſe which are more torrid: ſtill, however, it is highly probable that the diverſity is rather owing to man than to the fleſh of the Dog; ſince, among the hyperborean ſavages, it is eaten with equal avidity; and Dog-feaſts are as frequent with them as veniſon ones with us.

The wild animals which approach neareſt to the Dog are the wolf and the fox; and theſe, though they greatly reſemble each other in their internal conformation, are very diſtinct in their natures. The ancients believed that they bred together; and it is inconteſtibly evident that a Dog and a fox, or a Dog and a wolf, will engender in this country. Pennant informs us, that the proprietor of a menage in Holborn having turned a wolf to a Pomeranian hot bitch, the congreſs was as uſual between Dog and bitch, and the fruits produced were ten puppies. 'One of them,' ſays this ingenious naturaliſt, 'I have ſeen at Gordon Caſtle, which had very much the reſemblance of a wolf, and much of it's nature; and, on being ſlipped at a weak deer, it inſtantly ſeized the animal by the throat, and killed it.' He could not, however, learn whether this mongrel continued it's ſpecies; though another of the ſame kind did, and ſtocked the vicinity of Fochabers, in the county of Murray, with a multitude of curs of a very wolfiſh aſpect. A mongrel of this ſpecies was lately in the poſſeſſion of Sir Willughby Aſton. During the day-time, it proved very tame, but at night relapſed ſomewhat into it's natural ferocity. It never barked, but rather howled. When introduced by it's owner into a field or paſture where ſheep were feeding, it generally feigned lameneſs; but in his abſence it inſtantly attacked them. This creature had been obſerved to copulate with a bitch, which afterwards pupped; and the breed was imagined to bear a pretty ſtrong reſemblance to the ſuppoſed ſire. As a farther proof that the bitch will breed with the fox, the wood-man of the manor of Mongewell, in Oxfordſhire, lately kept one, which was the offspring of a tame fox by a ſhepherd's cur; and ſhe afterwards pupped by means of a Dog. Since, therefore, ſuch authentic proofs exiſt of the farther continuance of the breed, we may ſafely refer the wolf and the fox to the canine tribe.

However, all the endeavours of Buffon to procure a mixed breed of theſe animals proved ineffectual. This naturaliſt informs us, that he bred up a young wolf, taken in the woods at the age of two months, with a matin-dog of the ſame age. He ſhut them up together in a large yard, furniſhed with a ſhelter for their retirement. Neither of them knew any other individual of their kind, nor any of the human ſpecies except their feeder. In this ſituation they remained for three years, always properly attended, and free from all bodily reſtraint. During the firſt year, theſe young animals ſpent their time chiefly in ſporting with each other. At the commencement of the ſecond, they began to quarrel concerning their proviſions, though ſupplied with more than they could poſſibly devour. Their diſputes always originated on the part of the wolf; who, inſtead of proceeding to eat the victuals placed before them, immediately began to drive away the Dog, and catching up the wooden platter in which they were ſerved, ſo expertly in her teeth as to ſuffer none of it's contents to fall on the ground, in this manner carried it off: but, as ſhe could not entirely eſcape, ſhe frequently ran round the yard with it five or ſix times, ſtill holding it in the ſame poſition, though ſtopping at times for the purpoſe of breathing; till the Dog coming up, the wolf let fall her booty in order to attack him. The Dog, however, was the ſtrongeſt of the two; but, being more gentle, had a collar always round his neck, the better to ſecure him from the fury of the wolf. On the arrival of the third year, the quarrels of thoſe ill-paired aſſociates becoming more vehement, and their combats more frequent, the wolf was neceſſarily collared, as well as the Dog, who began to be more fierce and untractable. During the two firſt years, neither of theſe creatures ſeemed to ſhew the leaſt tendency towards engendering together; and it was not till the end of the third, that the wolf (the female) indicated any natural deſire, but without abating either in her fierceneſs or obſtinacy. This appetite rather increaſed than abated their natural animoſity; they became daily more ungovernable and ferocious, and nothing but the growlings of diſcord and reſentment reſounded continually from their habitation.

tion. In the ſpace of a few weeks, both of them appeared remarkably emaciated, and ſeldom approached each other without fighting. Their conteſts at laſt became ſo very deſperate, that the Dog killed the wolf, who was now become extremely feeble and waſted: and he alſo was ſoon after obliged to be ſlain; for, on regaining his liberty, he inſtantly attacked every animal that came in his way, man himſelf not excepted.

The above ingenious naturaliſt tried the like experiment on young foxes, but with no better ſucceſs, for they never engendered with Dogs; and he ſeems to be of opinion, that their natures are too oppoſite ever to provoke mutual deſire. One circumſtance however is obſervable; namely, that the animals on which he tried his experiments were probably too old when taken, and had in ſome meaſure acquired their natural ſavage diſpoſitions before they came into his poſſeſſion. This wolf, according to his own account, was two or three months old before it was caught, and the foxes were taken in traps. It may therefore eaſily be ſuppoſed, that nothing could ever after perfectly tame thoſe creatures, which had been ſuckled in a wild ſtate, and had imbibed all the habitudes of their dams.

The Dog, when firſt produced, is not a perfectly formed animal. In this kind, as in all the reſt which bring forth many at a time, the young are leſs compleat than in thoſe which bring forth only one or two. They are always whelped with their eyes cloſed, the lids being held together by a kind of membrane, which burſts as ſoon as the upper eye-lid becomes ſtrong enough to raiſe it from the under one. In general, they continue blind till the tenth or twelfth day; during which period, the bones of their ſculls are incompleat, their bodies are inflated, their noſes are contracted, and their whole figure is but imperfectly repreſented. In leſs than a month, the puppy begins to acquire all it's ſenſes, and from thence makes haſty advances to perfection. At the end of the fourth month, the Dog, like other animals, ſheds ſome of his teeth, which are renewed by ſuch of them as are permanent. The number of teeth amounts to forty-two, being twelve more than is found in any of the cat kind, which never have above thirty. The teeth of the Dog being his principal, and indeed his only defence, they are formed in ſuch a manner as to render him the moſt eſſential ſervices. There is ſcarcely any quadruped which either rends, cuts, or chews it's food with greater facility than the Dog. He cuts with his inciſores, or fore-teeth; he holds with his four great canine ones; and he chews with his grinders, which are fourteen in number, and ſo placed, that when his jaws are ſhut, there remains a diſtance between them; ſo that this animal, on opening his mouth to the greateſt poſſible ſtretch, does not loſe the power of his jaws. But the caſe is very different with reſpect to the cat kind, whoſe inciſores, or cutting-teeth, are very ſmall; and their grinders, when brought in contact, touch more cloſely than thoſe of the Dog, and conſequently have leſs power.

The Dog, who is capable of propagating his kind at the age of one year, generally lives to that of twelve; and the female goes with young nine weeks. Though few quadrupeds are leſs delicate with reſpect to their food, there are many kinds of birds which the Dog will not venture to touch; and, even in a ſavage ſtate, he refrains from injuring ſome to which nature ſeems to render him inimical. The wild Dogs and vultures about Grand Cairo in Egypt, according to the ingenious Haſſelquiſt, generally aſſociate together. As they are both very ſerviceable in devouring ſuch carcaſes as would otherwiſe putrify, and thus infect the air, the inhabitants ſupply them daily with food, in order to keep them near the city; and on theſe occaſions they are often ſeen together, feeding on the ſame piece of fleſh without the ſmalleſt appearance of animoſity.

Though the Dog is a voracious animal, he is capable of enduring hunger for a conſiderable time: and a remarkable inſtance of this kind is recorded in the Memoirs of the Academy of Sciences; namely, that of a bitch, who having been accidentally ſhut up in a country-houſe, lived there forty days, without any other nouriſhment than what ſhe derived from the wool of a bed-quilt which ſhe had torn to pieces. It ſeems, indeed, that water is more neceſſary to the ſubſiſtence of the Dog than food: he drinks often, though not in great abundance; and it is an univerſally received opinion, that if this animal be denied a ſufficient quantity of this wholeſome fluid, he will very ſoon diſcover ſymptoms of madneſs. This dreadful malady, the conſequences of which are ſo well known, is the greateſt inconvenience that reſults from the keeping this faithful domeſtic. But the diſtemper is by no means ſo frequent as the timorous are apt to imagine: the Dog is often ſuppoſed to be mad when he only labours under ſome common complaint; and, when he happens to bite under ſuch circumſtances, the force of imagination is frequently productive of the moſt fatal effects.

The Dog was conſecrated to Mercury, the moſt vigilant and crafty of all the heathen deities, becauſe vigilance and ſagacity are the attributes of that animal. According to Pliny, the fleſh of young Dogs was reckoned ſo pure, that it was offered in ſacrifice to the gods, and ſerved up in the repaſts prepared for them. Among the Egyptians, theſe animals were held in univerſal veneration; but this awful reſpect was greatly diminiſhed when, after Cambyſes had killed Apis, and cauſed him to be thrown into the layſtall, the Dog alone, of all animals, fed on his carcaſe. The Romans crucified one of theſe creatures annually, by way of puniſhment for their neglect in not warning them, by their barking, of the arrival of the Gauls, who beſieged the Capitol. If we may credit Ælian, the inhabitants of a certain country in Æthiopia had a Dog for their king, whoſe careſſes and barkings they conſidered as marks of his favour or reſentment; and around the temple dedicated to Vulcan on Mount Ætna, (ſays the ſame author) are placed ſacred Dogs, which, as if endowed with reaſon, fawn on thoſe who approach that temple with modeſty and devotion, but bite and devour others whoſe hands are unclean.

Dog, Shepherd's. This ſpecies, which is the Canis Domeſticus of Ray, and le Chien Berger of Buffon, is common in almoſt every country of the world, without any very conſiderable variations; and ſo well known, as not to require any particular deſcription.

Dog, Hound. This animal is well known for it's uſes in hunting. There are three varieties, all produced by the ſame dam; namely, the Hound, the harrier, and the beagle. The ears are long and pendulous; the noſe is obtuſe; the mouth is large;

large; and the barking is loud and deep. If this creature, as before obſerved, is tranſported into Spain or Barbary, where the hair of all animals becomes ſoft and long, it will be converted into the land and water-ſpaniel, of different ſizes.

Dog, Spaniel. From the name of this creature, it would ſeem as if we were indebted to Spain for the breed. Animals of this kind vary in ſize, from the ſetting-dogs to the ſpringing Spaniels, and ſome of the ſmall lap-dogs. Britain has long been famous for producing excellent Dogs of this ſort; great care having been taken to preſerve the breed in it's original purity. They are ſtill diſtinguiſhed by the name of Engliſh Spaniels; and, notwithſtanding the derivation of the term, it is probable that they are natives of Great Britain. The pointer, which is a Dog of foreign extraction, was unknown to our anceſtors; and the finder, which was another ſpecies uſed in fowling, appears to have been the ſame with our Water-Spaniel.

Dog, Grey-Hound. This ſpecies, which is indiſcriminately known by the names of the Grey or Gre-Hound, and is the ſwifteſt of all Dogs, purſues his game by the ſight, and not by the ſcent. The head and legs are long; and the body is ſo extremely ſlender, that the creature appears peculiarly adapted for fleetneſs. The Grey-Hound was formerly eſteemed of the firſt rank among Dogs, as appears from the foreſt-laws of King Canute, who enacted, that no perſon under the degree of a gentleman ſhould preſume to keep that animal. The varieties are, the Italian Grey-Hound, which is ſmall and ſmooth; and the Oriental Grey-Hound, which is tall and ſlender, with very pendulous ears, and long hair on the tail.

Dog, Iriſh Grey-Hound. This animal, which is alſo called the great Iriſh Wolf-Dog, is very rare even in the only country in the world of which it is a native; and is kept rather for ſhew than uſe, there being neither wolves, nor any other beaſts of prey, in Ireland, which appear to require ſo powerful an antagoniſt. The Wolf-Dog is therefore bred up only in the houſes of the great, or of ſuch gentlemen as chuſe to keep him by way of curioſity, being neither uſeful in hunting the hare, the fox, nor the ſtag; and equally unſerviceable as a houſe-dog. Nevertheleſs, he is extremely beautiful and majeſtic, and the largeſt of the canine race to be ſeen in the world. Some of theſe formidable animals are about four feet high, or as tall as a calf of a year old. In their ſhape, they ſtrongly reſemble the Grey-Hound, but are rather more robuſt, and inclining to the figure of the French matin, or the great Dane; and though they appear heavy and phlegmatic in their diſpoſitions, one of them is ſo amazingly ſtrong, as to be capable of engaging ſingly with the bear.

Buffon is of opinion, that theſe are the true Moloſſian Dogs of the ancients: but as he has adduced no proofs in ſupport of his notion, other naturaliſts are inclined to ſuppoſe it ill-grounded. If theſe animals are tranſported to other countries, they ſoon degenerate; and even in their native climates they are ſubject to change, unleſs great care is taken to prevent it. Formerly they were employed in clearing the iſland of wolves, which greatly infeſted it; but theſe beaſts of prey being now exterminated, the Dogs alſo begin to decline, as if nature intended to obliterate the ſpecies when they were no longer ſerviceable: and in this manner various kinds of animals, once well known, have gradually dwindled from the face of the earth.

Dog, Daniſh. This very large Dog reſembles the maſtiff, except that it's body and head are longer and more ſlender. Daniſh Dogs are generally of a yellowiſh brown colour; but ſome are grey, and others quite black. They carry their tails turned up, and have large high foreheads. Of this kind, perhaps, were the Dogs of Epirus, mentioned by Ariſtotle; or thoſe of Albania, ſo well deſcribed by Pliny.

Dog, Maſtiff. The Maſtiff Dog is large and ſtrong, and barks very loud. His head is extremely large; and his lips, which are very full, depend on each ſide. He has a noble mien, and rather commands reſpect than excites terror. Dr. Caius informs us, that three of theſe Maſtiffs are reckoned a match for a bear, and four for a lion; but, from an experiment made in the Tower by King James I. a lion was an unequal match for only three of them; for though two of the Dogs were diſabled in the combat, the third put the lion to flight.

Great-Britain was formerly ſo celebrated for it's Maſtiffs, that the Roman emperors had certain officers in this iſland, whoſe ſole buſineſs conſiſted in ſuperintending the breed, and tranſporting from hence to their amphitheatres ſuch of theſe animals as were deemed proper for their combats. But Maſtiffs are now uſually employed in guarding houſes, yards, and other places in which property is lodged, from the invaſions of robbers.

Dog, Bull. This ſpecies has a large thick head, and a ſhort noſe; the under-jaw is longer than the upper; and the tail is turned upwards. The Bull-Dog, which is a ſtrong, fierce, and cruel creature, frequently bites before he gives warning of his approach. He is peculiar to England; and, ſince the refinement of the age has ſuffered bull-baiting to decline, the breed is become more ſcarce.

Dog, Pug. This variety, called alſo the Dutch Maſtiff, ſomewhat reſembles the Bull-Dog, but is vaſtly ſmaller, and deſtitute of any of his intrepid qualities. The muzzle is black; the noſe is flat; the hair is a yellowiſh brown; and the tail is turned up in a curl. The ears of Dogs of this kind are generally cut off, that their heads may appear rounder. Some of them have black liſts running down their backs; but ſo great are the varieties in this ſpecies, that no poſitive deſcription of them can poſſibly be given. The Pug-Dog is a very domeſtic animal, never following his maſter to any conſiderable diſtance from home.

Dog, Terrier. The Terrier is a ſmall rough kind of hound, extremely well adapted to hunt the fox or the badger out of their holes; or rather, by his barking, to give notice in what part of their kennels they reſide, when the ſportſmen purpoſe to dig them out. Agreeable to the caprice of mankind, animals either become faſhionable, or fall into decay; and accordingly the Terrier is at preſent in high eſtimation in this iſland; but how long he will continue the general favourite, time only can develope.

Dog, Gaze-Hound. This animal received his appellation from his hunting by the eye, and not by the ſcent. He ſeemed equally adapted for the chace of the buck, the fox, or the hare; for he would ſelect from the herd the fineſt deer, purſue it by the eye for a long time, and if accidentally loſt,

loſt, recover it again by this ſingular diſtinguiſhing faculty, even though the animal ſhould have rejoined the herd. This ſpecies, however, is now either loſt, or totally unknown among us.

Dog, Blood-Hound. This creature was in high eſtimation among our active anceſtors. His uſefulneſs conſiſted in recovering any game that had either eſcaped from the hunter in a wounded condition, or had been killed and ſtolen out of the foreſt. When Great-Britain was leſs populous than at preſent, he was likewiſe employed in hunting thieves and robbers by means of their footſteps: at this time, however, the country being every where peopled, this variety ſeems to be entirely worn out. See Blood-Hound.

Dog, Leymmer. This animal, according to Caius, hunted both by the ſcent and ſight; and, with reſpect to the ſhape of his body, partook of the hound and the grey-hound. He was uſually conducted to the field by a leyme, or thong; from whence his name is derived. This ſpecies is at preſent entirely unknown.

Dog, Tumbler. This animal, which is alſo called the Rabbit-Dog, ſomewhat reſembles the ſmall grey-hound. He appears as if at play with his game even at the very time he is in purſuit of it. When he enters a warren, he neither barks, nor runs after the rabbits; but, ſeemingly inattentive, approaches ſo near, as to be within the reach of his prey, which he ſeizes with a bound, after the manner of the feline tribe.

Dog, Lap. Lap-Dogs are of various kinds and ſizes, owing to climate and culture. The Malteſe little Dogs, ſo much eſteemed by the ladies of ancient times, now give place to thoſe of Bologna. The ſmalleſt ones are generally preferred; but, the more ſingular and extraordinary they are in their conformation, the more they are valued by their whimſical admirers.

Dog, Small Daniſh. This animal, which is very gentle and ſportive, reſembles the harlequin Dog, except that he is ſhorter. His head is round; his eyes are large; and his noſe is ſmall and ſlender.

Dog, Harlequin. The Harlequin Dog reſembles the laſt deſcribed animal, but is longer, and generally black and white; though ſome are white, and of a cinnamon hue. There are ſeveral varieties among theſe; and, indeed, among all the ſmaller ſpecies.

Dog, Cur. The Cur-Dog, called alſo the Houſe-Dog, is about the ſize of the fox, with upright ears, and a kind of woolly hair beneath his tail. Cur-Dogs are generally of a mongrel breed, and conſequently their ſhapes and ſizes muſt be very different.

Dog, Shock. Shock-Dogs are diſtinguiſhed by their long curled hair, of which they have ſuch large quantities, that ſome of the white kinds have the appearance of ſheep; but their ſhape is very different, and their hair hangs ſo low and full on their heads, that their eyes ſeem almoſt loſt.

Dog, Turkish. This animal differs from all the other ſpecies in being entirely deſtitute of hair. The ſkin is ſmooth, of a fleſh-colour, and interſperſed with brown ſpots. The Turkiſh Dogs ſeem to be of the ſmall Daniſh breed, introduced into a warmer climate, where, in a ſucceſſion of generations, they become diveſted of their hair; they are therefore unable to endure the rigours of our climate, being extremely chilly, and ſubject to frequent ſhiverings even during the moſt favourable ſeaſons of the year.

Dog, Lion. This creature reſembles the animal in miniature from whence he receives his name. The hair of his fore-parts is extremely long, and that of his hinder ones equally ſhort; his noſe is obtuſe, and his tail long and tufted at the point; ſo that he reſembles the lion in all the foregoing particulars. But, notwithſtanding this ſimilarity, he differs very much from that fierce animal in his nature and diſpoſition, being one of the ſmalleſt creatures of the kind, and extremely feeble, timid, and inactive. The Lion Dogs were brought originally from Malta, where they are ſo very diminutive that the women frequently carry them in their ſleeves.

Dog, New Zealand. This ſpecies, which ſeems to have been originally brought from New Guinea, is likewiſe found in the Society Iſlands, and pretty much reſembles the ſharp-noſed, pricked-eared ſhepherd's cur. In the above iſlands, where theſe animals conſtitute the common food of the inhabitants, they are fattened with vegetables, which are generally crammed down their throats when they will not voluntarily eat them. They are uſually diſpatched by ſtrangling; and the extravaſated blood is preſerved in cocoa-nut ſhells, and baked for the table. They grow exceedingly fat; and ſome Europeans, who have been enabled to overcome their prejudices to this kind of fare, allow the fleſh to be ſweet and palatable. However, this cuſtom is not confined to thoſe ſimple iſlanders alone; the ancients reckoned a young and fat Dog excellent food, eſpecially if he had previouſly been caſtrated. Hippocrates deemed the fleſh of a grown Dog equal to mutton or pork, and very wholeſome and ſtrengthening; and the Romans, who were very fond of ſucking-puppies, ſacrificed them to their divinities, and eſteemed them as viands in which the gods themſelves delighted.

Dog, Barbet. This animal, which is a native of New Zealand, is covered with a kind of long ſilky hair much valued by the natives in trimming their ornamental dreſſes; but his fleſh is not eaten, like that of the common ſpecies. The Zealanders never make uſe of their Dogs for the ſame purpoſes as the Europeans; and indeed they are ſo exceſſively ſtupid, and poſſeſs the ſenſe of ſmelling in ſo imperfect a degree, that they ſeem totally unfit for the chace. They live entirely on fiſh; and ſo much care is taken of them by the natives, that they are never ſuffered to wet their feet.

Dog, Kamtschadale. The late ingenious Captain King informs us, that this animal, in his ſhape and mien, exceedingly reſembles the Pomeranian, or Wolf-Dog, except that he is conſiderably larger, and his hair ſomewhat coarſer. The colours of theſe Dogs are various, but the prevailing one is a light dun, or dirty cream. 'Towards the latter end of May,' ſays he, 'they are all turned looſe, and left to provide for themſelves during the ſummer, being ſure to return to their reſpective homes as ſoon as the ſnow begins to fall. Their food in winter conſiſts entirely of the head, entrails, and bones, of ſalmon, which are ſaved for that purpoſe; and with this diet they are but ſparingly fed. In this country the breed is very plentiful, as may eaſily be conceived from the great numbers employed in drawing ſledges: five of them are yoked to one ſledge, which carries only a ſingle perſon; and it is remarkable, that bitches are never uſed for this purpoſe, nor even Dogs before they have been caſtrated. The whelps are trained to this buſineſs, by being tied to ſtakes with light leather thongs which are made to ſtretch,

and having their victuals placed at a proper diſtance out of their reach; ſo that by a conſtant pulling and exertion to come at their food, they acquire both that ſtrength of limbs and habit of drawing which qualify them for their future deſtination.

'When the Kamtſchadales intend to perform a journey in winter over the frozen ſnow which covers their country, they yoke five Dogs, two and two, with a leader, to a ſledge about four feet and a half long, and one foot wide, made in the form of a creſcent, of light tough wood ſtrongly bound together with wicker-work. This ſledge is ſupported by four legs, about two feet high, which reſt on two flat pieces of wood five or ſix inches broad, and extending a foot at each end beyond the frame of the ſledge. Theſe are turned up before in the manner of a ſkate, and ſhod with the bones of ſome marine animals. The fore-part of the carriage is ornamented with thongs of leather and taſſels of coloured cloth; and from the croſs bar, to which the harneſs is joined, are hung links of iron, or ſmall bells, the jingling of which is ſuppoſed to animate the Dogs. The paſſenger ſits aſide, reſting his feet on the lower part of the ſledge, and carrying his proviſions and other neceſſaries wrapped up in a bundle behind him. The reins not being faſtened to the heads of the Dogs, but to their collars, have little power over them; and are therefore generally hung on the ſledge, while the driver depends entirely on their obedience to his voice for the direction of them. With this view the leaders are always trained up with a particular degree of care and attention; and ſome of them riſe to an extraordinary value on account of their ſteadineſs and docility. The driver is alſo provided with a crooked ſtick, which anſwers the double purpoſes of whip and reins; as, by ſtriking it into the ſnow, he is enabled to moderate the ſpeed of the Dogs, or even to ſtop them entirely; and when they are lazy, or otherwiſe inattentive to his voice, he chaſtens them by throwing it at them. On theſe occaſions, their dexterity in picking it up again is very remarkable, and forms the principal difficulty of their art. Yet it is not ſurprizing that they ſhould labour to become expert in a practice on which their ſafety ſo materially depends: for it is ſaid, that if the driver ſhould happen to loſe his ſtick, the Dogs inſtantly perceive it; and unleſs their leader be of the moſt ſober and reſolute kind, they will immediately run a-head full ſpeed, and never ſtop till they are quite ſpent; but as that does not happen very ſoon, the carriage is either overturned and daſhed to pieces againſt the trees, or hurried down ſome precipice, and buried in the ſnow.'

The above reſpectable gentleman, to whom we are indebted for the foregoing relation, obſerves, that the accounts given him of the fleetneſs of theſe Dogs, and of their extraordinary patience under the calamities of hunger and fatigue, were ſcarcely credible, if they had not been ſupported by the beſt authority. 'But,' proceeds he, 'we were indeed ourſelves witneſſes of the great expedition with which the meſſenger, who had been diſpatched to Bolcheretsk with the news of our arrival, returned to the harbour of St. Peter and St. Paul, though the ſnow was at this time exceedingly ſoft: and I was informed by the commander of Kamtſchatka, that this journey was generally performed in two days and a half; and that he had once received an expreſs from the latter place in twenty-three hours, though the diſtance is not leſs than one hundred and thirty-five Engliſh miles.'

DOG-FISH, PICKED, or HOUND-FISH. This fiſh, which is a variety of the ſhark kind, receives it's name from a ſharp ſpine placed exactly before each of the back-fins, and diſtinguiſhing it at once from the reſt of the Britiſh ſharks. The body, which is roundiſh and oblong, is covered with a rough ſkin, generally known by the name of fiſh-ſkin, and uſed by joiners and other artificers in poliſhing various ſubſtances, particularly wood. The back is of a browniſh aſh-colour; and the belly is white and very ſmooth. The noſe, which is long, extends a conſiderable way beyond the mouth, but is blunt at the end; the eyes are ſhaped ſomewhat like a boat, and covered with double membranes; the mouth, which is placed juſt under the eyes, is armed with a double row of ſmall teeth; and the two back-fins have ſtrong ſharp ſpines or prickles ſtanding before them, of which the one neareſt the head is thicker and longer, and that neareſt the tail ſhorter and ſmaller. Theſe fiſh, when at their full growth, weigh about twenty pounds each; and bring forth their young alive, which are produced from eggs hatched within their bodies. They are caught in the Britiſh ocean and the Iriſh ſeas: but on the coaſts of Scotland in particular, where they ſwarm, they are dried, and conſtitute a conſiderable part of the food of the common people.

Dog-Fish, Smooth. This ſpecies has no teeth; but the bones of each jaw, which are as rough as a file, ſupply their place. The ſkin is perfectly ſmooth, though in all others of this kind it is rough; and by that variation alone this creature is eaſily diſtinguiſhable from the picked Dog-Fiſh.

DOG-FLY. A ſpecies of Fly very common among woods and buſhes, and extremely troubleſome to dogs. Theſe Flies uſually faſten on the ears of thoſe animals, from whence they are ſeldom diſlodged except by being killed. They ſting very ſeverely, and always occaſion a ſwelling. They ſomewhat reſemble thoſe flat black flies ſo inimical to cattle. They are deſtitute of trunks, but are furniſhed with two teeth like thoſe of the waſp; and their wings adhere ſo cloſe to their bodies, as to be ſcarcely perceptible.

There are two varieties of the Dog-Fly; the largeſt is generally found in woods, and the ſmalleſt frequents hedges.

DOG's TOOTH SHELL. See Dentalis.

DOLIUM. A genus of ſhells, called by ſome authors conchæ globoſæ; and, by French naturaliſts, tonnes. The characters of the genus are theſe: an univalve ſhell having a globoſe or round belly, with a lax aperture, ſometimes ſmooth, and at others dentated; the clavicle is either moderately umbonated, or depreſſed; and the columella is in ſome ſpecies ſmooth, and in others wrinkled. Theſe ſhells are alſo by ſome termed conchæ ampullaceæ; and they have at various periods been diſtinguiſhed by other names; but all tend to expreſs the globular figure of the body, the leading character by which they are diſtinguiſhed from all other ſhells.

The Perſian Dolium, ſo frequently employed in ornamenting the cabinets of the curious, is a very ſingular ſpecies; but the globoſe figure of it's body evidently refers it to this genus, though it differs in many particulars from every other claſs. There are ſix ſpecies of the round umbilicated Dolia; five of the oblong and ſmooth; ſeven of the oblong,

coſtated,

coſtated, and umbonated; five of thoſe with long and arched tails; and ſeven of that ſeries which, from their figure, are called bullæ; to all which may be added a very curious ſpecies of faſciated Dolium, of a blue colour externally, and white internally; by ſome naturaliſts called the vitta cœrulea; and of which kind there is an olive-coloured ſhell.

DOLPHIN. The Dolphin, in the Linnæan ſyſtem of zoology, conſtitutes a diſtinct genus of fiſhes of the order of cete, and claſs of mammalia; the characters of which are, that there are teeth in both jaws, and that there is a pipe in the head.

Hiſtorians and philoſophers have ſeemingly contended, who ſhould invent the greateſt number of fables concerning the Dolphin. In the earlieſt ages, it was celebrated for it's attachment to the human race, and diſtinguiſhed by the name of the Boy-loving, and Philanthropiſt. Scarcely could an accident happen in the liquid element, but the intervention of the Dolphin afforded relief to the unfortunate. The muſician Arion, thrown into the ſea by pirates; and the boy taking an airing in the midſt of the ſea, and returning again in ſafety; were obliged to the Dolphin for it's ſervices. It is not eaſy, however, to aſſign a reaſon for this extraordinary predilection of the ancients towards this creature: it's figure is far from prejudicing us in it's favour; and it's extreme rapacity tends ſtill leſs to endear it to us. Indeed, there appears to be no qualities in this animal capable of exciting the compaſſion of the human race, except it's plaintive moanings; by which, when taken, it ſometimes indicates it's ſenſe of pain, and continues to expreſs it till it expires. This circumſtance might at firſt, in all probability, have excited human pity, and produced affection. At preſent, however, Dolphins are regarded, even by the vulgar, in a very different light: their appearance is generally eſteemed a very unfavourable omen by mariners; ſince, from their boundings and frolics in the water, they have often been taught to expect an approaching ſtorm.

Neither have the ancients confined their fabulous reports concerning theſe animals to one circumſtance only: as, from their leaps out of the water, they aſſume a temporary curvature, which is by no means their natural figure, the old painters and ſculptors have univerſally erred in their delineation. Dolphins are ſcarcely ever exhibited by the ancients in a ſtraight ſhape, but curved, in which poſition they ſometimes appear when exerting their force; and the poets alſo, for whom preſcription may be pleaded, have adopted the general error. Ariſtotle, indeed, of all the ancients, ſteers the cleareſt from the intermixture of fable with deſcription; and gives us in general ſo faithful a hiſtory of this animal, as evinces his judgment and ſagacity to be ſuperior to thoſe of all his ſucceſſors. But the elder Pliny, Ælian, and ſome others, have ſet no bounds to their credulity and fiction: the former aſſerts that a Dolphin, if taken out of it's native element, will inſtantly die; while Rondoletius, on the contrary, aſſures us, that he has ſeen one carried alive from Montpelier to Lyons.

The moderns, however, have acquired juſter notions of theſe animals, and rejected the various fables concerning them which daily experience ſerves to contradict. Indeed, their numbers are ſo great, and (though naturally ſhy) they are ſo frequently caught, that ſuch peculiarities, were they really poſſeſſed of them, would have been long ſince aſcertained. They are frequently ſeen in ſuch large ſhoals in almoſt all the circumambient ſeas of this kingdom, that they prove noxious, and ſometimes even fatal, to ſeamen who navigate ſmall veſſels. In ſome places, when they riſe to the ſurface for the purpoſe of breathing, they almoſt totally darken the water; and particularly, before boiſterous weather, they ſeem to be much agitated, ſwimming againſt the wind, and tumbling about with unuſual violence; but whether theſe motions are the gambols of pleaſure, or the agitations of terror, cannot well be determined. It ſeems moſt probable, however, that they have an inſtinctive apprehenſion of thoſe ſeaſons of turbulence, when the leſſer fiſhes ſhrinking to the bottom, their prey no longer preſents itſelf in it's uſual abundance. In calm and temperate weather, they are ſeen herding together, and purſuing ſhoals of various fiſh with great impetuoſity. The method which they adopt in hunting their game, if it may be ſo called, is to follow in packs, and thus yield each other their mutual aſſiſtance. At thoſe ſeaſons when mackarel, herrings, ſalmon, and other fiſh of paſſage, begin to make their appearance, the cetaceous tribes are obſerved to be more fierce in their purſuit, urging their prey from one creek or bay to another, deterring them from the ſhallows, driving them towards each other's ambuſh, and uſing all the various arts which their inſtinctive faculties are capable of teaching them.

But it ſometimes happens that either the impetuoſity or hunger of the Dolphin, and it's companions the porpus and the grampus, in their uſual purſuits, urges them beyond the limits of ſafety. The fiſhermen on the Corniſh coaſts, who ſpread their extenſive nets for pilchards, ſometimes experience a very unwelcome capture in one of theſe creatures: on ſuch occaſions, their feeble nets, which are only calculated for the detention of the ſmaller kinds of fiſh, ſuffer an univerſal laceration from the efforts of this ſtrong animal to eſcape; and, if not diſpatched before it has had time to flounder, the nets are inevitably deſtroyed, and the fiſhery is interrupted.

The natural ſhape of the Dolphin is almoſt ſtraight, the back being very ſlightly incurvated, and the body ſlender. The noſe, which is long, narrow, and pointed, ſomewhat reſembles a bird's beak; and hence it is called by the French L'oye de Mer. It has forty-two teeth, each a little more than an inch in length, conic at their upper ends, ſharp-pointed, and ſlightly bending inwards: they are placed ſo very little aſunder, that when the creature's mouth is ſhut, the teeth of both jaws lock into each other. The ſpout-hole is ſituated in the middle of the head; the back-fin is high, triangular, and ſomewhat nearer the tail than the head; and the pectoral fins are placed very low. The tail deſcribes the form of a creſcent; the ſkin is ſmooth; the colour of the back and ſides is duſky; and the belly is whitiſh.

Dolphins were formerly eſteemed great delicacies in this country; and Dr. Caius remarks, that one of them, caught in his time, was thought a preſent worthy of the Duke of Norfolk, who diſtributed part of it among his friends: it was roaſted, and dreſſed with porpus ſauce made of crumbs of fine white bread mixed with vinegar and ſugar.

Several parts of the Dolphin are applied to medicinal uſes; namely, the liver, the aſhes, the belly, and the fat. The belly, when dried, triturated, and exhibited in ſome proper fluid, is ſaid to cure

ſplenetic

ſplenetic patients; and we are told that the liver, when roaſted, and uſed with aliments, perfectly cures tertian and quartan fevers, and alſo that ſpecies of nocturnal fever known by the name of typhus. Pliny enumerates the aſhes of the Dolphin among the ſpecifics for curing the ring-worm and leproſies; and, according to the ſame author, the fat, when melted and drank with wine, proves effectual in the removal of dropſies.

The Dolphin is ſaid to go ten months with young; and, like the whale, ſeldom to bring forth more than one at a time, and that in the middle of ſummer. It lives a great number of years, though ſome ſay not more than twenty-five or thirty. This ſpecies of Dolphin, however, ſhould not be confounded with that to which ſailors give the ſame name; the latter being the coryphæna hippuris of Linnæus, and the dorado of the Portugueſe deſcribed by Willughby.

DOLPHIN OF THE MODERNS. This fiſh, the hippuris of ſome authors, and the dorado of others, has a flat and roundiſh ſnout, and the body tapers from the head to the tail; but it's principal beauty conſiſts in it's colours, which are indeed very brilliant. The back is wholly enamelled with blueiſh green ſpots, which ſhine like jewels in a dark ground; the tail and fins are of a gold-colour; and nothing can exhibit a more beautiful appearance than this fiſh when either viewed in it's native element, or before it is quite dead. It grows to the length of five or ſix feet, and is nearly as thick as the ſalmon. A remarkable fin runs from the head, along the back, to the root of the tail, which in the middle is ſeven inches broad, and conſiſts of a kind of coriaceous membrane with ſoft ſpines; oppoſite to which there is another fin, not more than one inch broad, and extending from the vent to the tail. The tail, which is upwards of two feet and a half long, is divided into two large horns; and the ſcales are ſo very minute as to be hardly perceptible. This fiſh ſwims with ſuch amazing velocity, as frequently to keep pace with a ſwift-ſailing ſhip for a conſiderable ſpace of time. See CORYPHÆNA, and HIPPURIS.

DONAX. A genus of bivalve ſhells, the marginal front of which is much blunted; and the incloſed animal is a tethys. There are only two ſpecies found on the Britiſh coaſts.

DONAX, YELLOW. The outſide of this ſhell is of a gloſſy whitiſh colour tinged with a dirty yellow, and marked longitudinally with numerous elegant minute ſtriæ; and the inſide is purple. This ſpecies is upwards of one inch in breadth.

DONAX, PURPLE. This ſhell is ſomewhat broader than the preceding, of a uniform ſhape, extremely blunt at one end, ſtriated like the former, and ſerrated at the edges. It is internally of a purpliſh colour, and tinged with the ſame hue externally.

DONGON. The Philippine name for a peculiar ſpecies of crane. The body, which is large, reſembles that of the gooſe; the neck is rather ſhort; and the beak, which is very long and broad, is of a greyiſh colour. There is alſo another remarkable ſpecies of crane peculiar to the Philippine iſlands, called by the natives tipul or tihol; which is ſo very tall, that, when ſtanding erect, it is capable of overlooking a middle-ſized man.

DONNA. A name given by Zuchelli, and ſome other authors, to the manati or ſea-cow.

DONZELLINA. The julis: a very beautiful fiſh caught in the Mediterranean ſeas, and approaching to the nature of the turdus or wraſſe. See JULIS.

DORADO. A large ſea-fiſh, called by the Brazilians guaracapema. There is a ſort of creſt on the head, adjoining to a large fin which extends to the tail; and there is likewiſe another fin which reaches from the vent to the tail. The ventral fins extend almoſt to the vent, which is placed in the middle of the body; the mouth is of a moderate ſize; there are ſharp teeth in the jaws, palate, and tongue; the eyes are large; the ſcales are extremely ſmall; and the colour is a blueiſh green. This fiſh gradually decreaſes in thickneſs from the head; and the fleſh is fat, ſweet, and ſolid, like that of the tunny. The Dorado reſembles the dolphin of the moderns, or hippuris, in ſuch a number of particulars, that many naturaliſts have ſuppoſed them to be one and the ſame fiſh.

DOREAS LYBICA. A name given by Ælian and ſome other naturaliſts to the common antelope.

DOREE, or JOHN DOREE. A fiſh called by the generality of naturaliſts faber, gallus marinus, and zeus. The term Doree is borrowed from the French; and, with reſpect to the word John, prefixed to it by ſome writers, it ſeems to be only a corruption of the French word Jaune, Yellow; that nation expreſſing the colour of the ſides of this fiſh by the phraſe Jaune Doree; whence the appellation John Doree; or, among the vulgar, John Dory.

Superſtition has made the Doree to rival the haddock for the honour of having been the fiſh out of whoſe mouth St. Peter took the tribute-money; leaving on it's ſides thoſe inconteſtible proofs of it's identity, namely, the marks of his finger and thumb. But it is difficult, and indeed unneceſſary, to determine on which ſide to give a verdict; the Doree likewiſe aſſerting an origin of it's ſpots of a ſimilar nature, but of a much earlier date than the former: for St. Chriſtopher, if we may credit Belonius and Aldrovandus, in wading through an arm of the ſea, having caught a fiſh of this kind en paſſant, as an eternal memorial of the fact, left the impreſſions on it's ſides to be tranſmitted to all poſterity.

The form of the Doree is extremely forbidding. The body is oval, and greatly compreſſed on the ſides; the head is large; the ſnout projects greatly; the mouth is very wide; the teeth are extremely ſmall; and the eyes are large, the irides being yellow. The lateral line is unuſually diſtorted, ſinking at one end, and riſing near the middle of the back; and beneath it, on each ſide, there is a black round ſpot. The firſt dorſal fin conſiſts of ten ſtrong ſpiny rays, with long filaments reaching far beyond their extremities; and the ſecond, which is placed near the tail, is compoſed of twenty-four ſoft rays, the middlemoſt being the longeſt. The pectoral fins have fourteen rays, and the ventral ſeven: there are alſo two anal fins; and the tail, which is round at the extremity, conſiſts of fifteen branched rays. The weight of this fiſh ſeldom exceeds twelve pounds. It is called the Doree, or gilt-fiſh, from it's ſhining appearance when alive. It's ſides are of an olive colour, varied with light blue and white; and indeed the beauty of it's colouring in ſome meaſure atones for the deformity of it's figure.

It was long before this fiſh attracted the notice of Britons, as one not only edible, but even delicious. The vulgar prejudices which aroſe from it's deformity deterred our anceſtors from taſting it: but

but the late Mr. James Quin, that judicious comedian and bon vivant, effectually eſtabliſhed it's reputation, and added a moſt delicious fiſh to the catalogue of luxuries.

The Doree is found not only in the ſouthern ſeas of this kingdom, but likewiſe on the coaſt of Angleſea. Thoſe of the largeſt ſize are taken in the Bay of Biſcay off the French ſhores; and alſo in the Mediterranean ſeas.

Doree, Indian. This fiſh, which is caught in many parts of the Eaſt Indies, and called meerhaen by the Dutch, appears to be the ſame with the animal deſcribed by Marcgrave under the appellation of the abacatui.

DORIS. A genus of creeping worms, of which there are ſeveral ſpecies. The body is oblong, and flat beneath; the mouth is placed below, and the vent behind; and there are two retractile feelers.

Doris, Lemon-Coloured. The body of this ſpecies is oval, convex, and marked with numerous punctures; the vent being ſurrounded with elegant ramifications. It is of a lemon colour; and is found in different parts of the Britiſh ſeas, particularly near Brighthelmſtone, where it is called the ſea-lemon.

Doris, Warty. This variety, which is found near Aberdeen in Scotland, is of an ovated figure, convex, and tuberculated.

Doris, Amber. The body of this ſpecies reſembles the ſnail; it's front is abrupt; and it's colour is like that of amber. It inhabits the ſeas near Angleſea.

DORMOUSE. A kind of wild field-mouſe, called alſo the ſleeper, belonging to the order of glires in the Linnæan ſyſtem; having two cutting teeth in each jaw; four toes before, and five behind; and naked ears. Theſe mice inhabit woods and thick hedges; and build their neſts, which are lined with moſs and dead leaves, either in the hollow parts of trees, or near the bottoms of cloſe ſhrubs. Towards the approach of winter, they form little magazines of nuts, beans, or acorns, on which they ſubſiſt during that rigorous ſeaſon immured in their retreats. As ſoon as they perceive the firſt advances of the cold, they prepare to mitigate it's effects by rolling themſelves up in balls, and thus expoſing their ſmalleſt ſurfaces to the weather. But it frequently happens that either the warmth of the ſun, or an accidental tranſition from cold to heat, thaws their nearly ſtagnant fluids, and awakes them from their temporary lethargy; on ſuch occaſions, their proviſions being at hand, they are not under the neceſſity of ſearching for the means of ſubſiſtence at the hazard of their lives. In this manner they uſually continue, ſometimes aſleep, and at others awake, during five months of the year; and, as they ſeldom venture from their abodes, they are of courſe but rarely ſeen. They uſually bring forth three or four at a time; but that only once a year, viz. in the ſpring ſeaſon.

Buffon diſtinguiſhes theſe animals into three ſpecies; namely, the greater Dormouſe, called the loir; the middle, termed the lerot; and the leſs, denominated the muſcardin: but we ſhall adopt the diviſions of the ingenious Pennant, whoſe accuracy with reſpect to ſubjects of natural hiſtory, we are inclined to think, juſtly entitles him to pre-eminence.

Dormouse, Common. The eyes of this ſpecies are full and black; the ears are round and naked; the tail is two inches and a half long, and pretty hairy towards the extremity; the body is about the ſize of that of the common mouſe, but rather more plump; and the colour is a tawny red, except on the throat, where it is white. This variety inhabits almoſt every part of Europe. It generally builds it's neſt near the bottom of a thick hedge, either with moſs or the leaves of trees; and ſubſiſts on nuts, which it eats in a kind of erect poſture, after the manner of the ſquirrel. At the commencement of the brumal ſeaſon, it rolls itſelf up in it's retreat, where it lies in a torpid ſtate till revived by the genial heat of the returning ſpring. Sometimes, however, when the weather proves unuſually mild in winter, it ſeems to revive; but when that motive ceaſes, it very ſoon relapſes into it's former ſtate.

Dormouse, Striped. This animal is a native of the northern parts of Aſia, and alſo of America. When deprived of all other means of eſcape, it will aſcend a tree: however, it uſually burrows under ground, where it forms a habitation with two entrances, that it may be furniſhed with the means of egreſs ſhould one or other of the paſſages be accidentally ſtopped up. This retreat, which is very ingeniouſly contrived, reſembles a long gallery with diverticles on each ſide, each terminating in an enlarged chamber, which ſerve as granaries for the animal's winter proviſions: in one, acorns are depoſited; in another, maize; in a third, hickery nuts; and, in a fourth, chinquapin cheſnuts, which ſeem to be their favourite aliment.

Theſe creatures ſeldom venture abroad during the winter, at leaſt while their proviſions hold out; but when they happen to fail, which is ſometimes the caſe, they make their way into cellars where apples are lodged, or into barns ſtored with maize, and there make great havock. During the maize-harveſt, they bite off the ears, and cram their mouths ſo full with that kind of corn, that their cheeks appear greatly diſtended. It has already been obſerved, that they ſhew a great predilection to particular ſorts of food; and accordingly, if they happen, after filling their mouths with rye, to meet with wheat, they inſtantly relinquiſh the former, in order to feaſt on the latter. They are extremely wild, bite very ſeverely, and ſeem incapable of being tamed.

The ears of the Striped Dormouſe are plain; the ridge of the back is marked with a double black ſtreak; and each ſide with a pale yellow ſtripe, bounded both above and beneath by a black line. The head, body, and tail, are of a reddiſh brown colour; the breaſt and belly are white; the noſe and feet are a pale red; and the eyes are full and prominent.

Dormouse, Fat, the Loir of Büffon. The body of this animal is covered with ſoft aſh-coloured hair; the belly is whitiſh; the tail is furrounded with very long hair; the ears are thin and naked; the length, from the noſe to the tail, is nearly ſix inches, that of the tail being four and a half; and the body is thicker than that of the ſquirrel.

This ſpecies, which inhabits the ſouthern parts of Europe, and alſo the ſouth-weſt parts of Ruſſia, lives in the hollows of trees. It feeds on fruits and acorns; and remains in a torpid ſtate during the winter ſeaſon. The fleſh of this creature was reckoned a peculiar delicacy among the ancient Romans; and we are informed that it is at preſent much eſteemed in ſome parts of Italy.

Dormouse, Garden. The eyes of this animal are ſurrounded by a large black circle, reaching

almoſt to the baſes of it's ears, behind which there is a large ſpot of the ſame colour. The head and body are of a tawny colour; the throat and belly are white, tinged with yellow; and the tail is long, the hairs at the beginning being very ſhort, and buſhy at the extremity. It meaſures five inches from the noſe to the tail, which laſt is about four inches in length.

The Garden Dormouſe inhabits the ſouthern countries of Europe; and is alſo found in magpies neſts and hollow trees about the banks of the Volga and other temperate parts of the Ruſſian dominions. Delighting in all ſorts of fruit, it is very deſtructive to gardens; and generally fixes it's abode in a hole of ſome decayed wall, where it remains in a ſtate of torpidity during the winter. It has a rank ſmell, like that of the rat; and uſually brings forth five or ſix at a time.

Dormouse, Earless. The head of this ſpecies is flat; the noſe is obtuſe; the eyes are full and black; and the upper lip is divided. The apertures of the ears are ſcarcely viſible; the whiſkers are long; the toes are large and diſtinct; and the claws are very long. The head, back, ſides, and front of the fore-legs, are of a pale ferruginous colour intermixed with black; a black line extends on each ſide from the ſhoulder to the hind-parts, and above each eye there is another; the belly and feet are of a dirty white hue; the tail is black in the middle, and hoary on the ſides; and the hind-legs are black behind, and naked.

This animal, which inhabits the interior parts of Africa, never climbs trees, but burrows under ground; and feeds on bulbous roots, eſpecially potatoes, of which it appears exceedingly fond. It frequently walks on it's hind-feet; it is very tame and inoffenſive; and it covers the orifice of it's neſt with various materials, the better to conceal the inhabitants.

DORSCH. A ſmall fiſh of the cod kind frequently caught in the Baltic, though but rarely in other ſeas; and known among authors by the name of aſellus varius, or ſtriatus. It is remarkable for having the ſofteſt and ſmootheſt ſkin of all the cod kind; nevertheleſs, it is not deſtitute of ſcales. It uſually grows to about a foot in length; and approaches very nearly to the whiting pollack; but with this difference, that it is furniſhed with a beard. It's fleſh is delicate and wholeſome.

DOTTEREL. The name by which the morinellus is commonly known in moſt parts of Great Britain. This bird is about ten inches long, and the expanſion of it's wings is nineteen and upwards. The female weighs about a quarter of a pound; but the male is ſomewhat lighter, as well as ſmaller. The bill is black, ſlender, and about an inch long; the forehead, top, and back of the head, are black, except that there are ſome white ſpots in the former; and a broad white line over the eyes ſurrounds the whole. The cheeks and throat are white; the neck is of a cinereous olive-colour; the middle of the feathers on the back, as well as the coverts of the wings and tail, are olive, the edges of the wings being of a dull deep yellow; and the quill-feathers are brown, except the exterior ſide of the firſt feather, which is white. The tail is compoſed of twelve brown olive-coloured feathers, barred with black near their ends, and tipped with white. The breaſt and ſides are a dull orange; and immediately above them runs a white line, bounded by a very narrow black one. The belly is black; the thighs and vent-feathers are white; the legs are a yellowiſh green; and the toes are duſky. The colours in the female are generally more dull than thoſe in the male; the white line over the eye is ſmaller; the crown of the head is mottled with brown and white; the tranſverſe white line on the breaſt is wanting; and the belly is mixed with black and white.

Dotterels inhabit Lincolnſhire, Cambridgeſhire, and Derbyſhire. On Lincoln Heath, and on the moors of Derbyſhire, they are migratory, appearing in ſmall flocks about the latter end of April, and continuing only till the middle of June; during which time they grow very fat, and are eſteemed delicious food. In April and September, they frequent the Wiltſhire and Berkſhire downs; but their breeding-places, as well as their winter retreats, are totally unknown.

The Dotterel, which is an extremely ſimple animal, is ſometimes taken in the night-time by candle-light. If the fowler ſtretches out an arm, the bird alſo expands one of it's wings; and if he moves a foot, the Dotterel does the ſame: in ſhort, this ſilly bird imitates it's inſidious enemy to the utmoſt of it's power, while he is buſied in ſpreading the net for it's deſtruction. However, ſince the univerſal uſe of fire-arms, this mode of catching Dotterels has been diſcontinued, as proving too tedious; and, at preſent, the ſportſman watches the arrival of his prey, and diſpatches it with his fowling-piece.

Dotterel, Sea, or Turn-Stone; the morinella tringa of Linnæus. This bird frequents the Corniſh coaſts. The bill is ſtraight, black, near an inch long, thick at the baſe, ſharp at the point, ſomewhat depreſſed, and pretty hard. The upper part of the body, except the back, which is white, and the top of the breaſt, are of a brown colour; the lower parts, except the breaſt, are of a ſnowy whiteneſs; and on the rump there is a large tranſverſe black mark. Near the joint of the wings there is a white ſpot; the lower parts of the tail-feathers are white, and the upper black; and the legs are ſhort, and of a ſaffron colour.

DOUC. A ſpecies of monkey peculiar to Cochin-China. It grows to the ſize of the baboon; and has a very long tail, and a flat face like that of the ape. It likewiſe reſembles the American monkey, in having no calloſity on it's poſteriors. Thus it appears in ſome meaſure to unite theſe different genera of animals, and to link the monkies of the old continent with thoſe of the new.

DOVE. A beautiful genus of birds, diſtinguiſhed from the pigeon tribe only by the diverſity of their names, all of them deriving their origin from the Stock-Dove; the Engliſh name implying the ſtock or ſtem from which the other domeſtic kinds have been propagated.

Stock-Doves breed either in the holes of rocks, or in excavated trees of the foreſts. All other birds of the pigeon kind, like rooks, build their neſts in the moſt towering branches: but this ſpecies generally reſides in artificial cavities; and, from the united allurements of ready proviſions and a numerous ſociety, eaſily ſubmits to the human ſpecies. Still, however, it preſerves it's native hue for ſeveral generations; and becomes more variegated only in proportion as it deviates from the original ſimplicity of it's ſylvan colouring.

Dove, Ring. This bird is called columba palumbus by Linnæus, palumbus torquatus by Aldrovandus and others, and phaſſa by the Greeks. It's beak is yellow; it's feet are naked and red; and it's

it's legs are feathered almoſt down to the feet. The head, the back, and the coverts of the wings, are of a blueiſh aſh-colour; the lower ſide of the neck and the breaſt are a purpliſh red daſhed with aſh-colour; the upper part of the neck is adorned with a very regular and beautiful white circle, from which the bird receives it's name; and the whole neck, both above and below it, is delightfully variegated with changeable colours, according to the light in which they are viewed. The belly is a dirty white; the greater quill-feathers are duſky, the reſt being cinereous; and beneath the baſtard-wing there is a white ſtroke which points downwards.

The Ring-Dove being the largeſt bird of it's kind in Britain, is eaſily diſtinguiſhed by it's ſize. It weighs about twenty ounces; it's length is eighteen inches, and it's breadth thirty. It ſeldom flies ſingly, but in large flocks; and it ſubſiſts on ivy-berries and other vegetable ſubſtances. Theſe birds build their neſts in the branches of trees; but all attempts to domeſticate them have hitherto proved ineffectual. About the commencement of the winter ſeaſon they aſſemble in large flocks, and deſiſt from cooing; but they pair again about the beginning of March.

Dove, Turtle. This is a very beautiful little bird of the pigeon kind, found in ſeveral parts of England, but particularly in the weſtern counties. The head, neck, and back, are, like the common pigeon, of a blueiſh grey colour, with an admixture of a reddiſh brown near the rump and at the bottom of the neck; the belly is white; the breaſt and throat are a fine vivid purple, except that the verge of each feather is yellow; and the ſides of the neck are variegated with a ſort of ringlet of beautiful white feathers having black baſes. The tail is about three inches and a half long, the two middlemoſt feathers being duſky brown, and the others black with white tips; and the extremities and outer webs of the exterior feathers are wholly white. The irides are a fine yellow; and a beautiful crimſon circle encompaſſes the eye-lids. The chin and forehead are whitiſh; and on each ſide of the neck there is a ſpot of black feathers prettily tipped with white.

This bird weighs about four ounces. It feeds on hempſeed, and other vegetable ſubſtances; and, being remarkably ſhy, breeds in the moſt retired ſituations. It is faithfully attached to it's mate, even to a proverb; and, if we may credit the opinion of the vulgar, when either of them pays the debt of nature, the ſurvivor lives in a ſtate of ſolitude ever after.

Dove, Turtle, Indian, of Aldrovandus. The female of this ſpecies is entirely white, except the feet, which are red; and the bill, which is black: and the male is wholly of a light red colour, and of the ſize of the common pigeon. The irides are of a reddiſh ſaffron hue; and a narrow black ring ſurrounds the neck.

Dove, Turtle, Indian, of Hernandez. This ſpecies is ſomewhat bigger than the ſparrow. The upper part of the body is brown, except that the feathers are edged with black; the fore-parts of the wings are partly black, and the others of a duſky colour; the end of the tail is tinged with white and brown promiſcuouſly; and the feathers which cover the lower part of the body are white, terminating in black lines. The head is ſmall; the bill is black; and the legs and feet are whitiſh. Theſe birds, which frequent mountainous ſituations, uſually grow very fat, and are eſteemed delicious food.

Dove, Turtle, of Barbadoes. This bird is about the ſize of the lark; and, from it's reſemblance to the Indian Turtle-Dove of Hernandez, is by many naturaliſts ſuppoſed to be the ſame. The irides are of a golden hue; and all the feathers on the upper part of the body are of a darkiſh aſh-colour, with lunated blackiſh edges. The prime-feathers of the wings appear reddiſh when the bird is in the act of flying; the tail is a duſky aſh; the feathers on the belly are white, with duſky edges, in the ſhape of a creſcent; and the feet are white.

Dove, Green-Winged. This ſpecies, which is a native of the Eaſt Indies, is one of the moſt beautiful of the Dove kind. The bill, which is nearly an inch in length, is of a ſcarlet colour from the point to the noſtrils, and of a pale blue from the noſtrils to the head. The eyes are darkiſh; and from the forehead, which is white, proceed two lines of the ſame colour above the eyes towards the hinder part of the head. The crown of the head is blueiſh; the ſides of the head, the neck, and the breaſt, are roſaceous; the belly is of a dirty orange hue, which inſenſibly blends itſelf with the roſe colour of the breaſt; the upper ſides of the wings, when viewed in certain lights, diſplay a beautiful green, and in others aſſume the tinge of bright copper or gold; the larger quills are a dirty black; the ſhoulder or ridge of the wing is marked with ſmall white ſpots; the ſides under the wings are of the ſame colour with the belly; the covert-feathers are a dark cinnamon; the interior webs of the quills are in ſome parts tinged with a common cinnamon; but, in others, with a duſky black. The middle of the back is a dirty brown; the lower part of the back, and the feathers which cover the tail, are cinereous; the middle feathers of the tail are black, and the outer ones cinereous, with black tips; the legs and feet are reddiſh; and the claws are a light brown.

Dove, Long-Tailed. The head of this bird is ſmall in proportion to the body; the neck is of a moderate length; the body is pretty long; the tail is longer than the whole body; the wings are of a middling length; the bill is a little incurvated at the point, of a light horn colour about the noſtrils, and darker towards the point; the irides are dark; and a white line runs from the corner of the bill to the eye, which it encircles. The fore-part of the head, both above and beneath the bill, is yellowiſh, the hinder part being a light pigeon blue; which colours loſe themſelves in each other when united. There is a pretty large black ſpot exactly under the ear-holes; the fore-part of the neck and breaſt are of a bloſſom-colour, changing gradually towards the belly into a clay; the lower part of the belly, the thighs, and the coverts under the tail, are a dull yellow with an admixture of cinereous; the ſuperior part of the neck, the back, and the upper ſides of the wings, are a dark, dirty brown; the ſcapular feathers between the back and wings, as well as ſome of the quills and coverts next the back, are marked at their ends with oval black ſpots of different magnitudes, in number about ten or twelve on each ſide. The rump, and the feathers which cover the tail, incline more to an aſh-colour than the back and wings; the middle feathers of the tail are black, and very long, the ſide ones gradually diminiſhing in length; ſo that the exterior feathers on each ſide are not above half as long as the middlemoſt, but are of a blueiſh aſh-colour, having bars of black near their tips: the tips themſelves are white; the legs and feet,

as is common in the Dove kind, are red; and the claws are brown. The extreme length of the tail, which is ſhaped like that of the magpie, is the moſt ſingular feature in this ſpecies, which appears to be a native of the Weſt Indies.

Dove, Transverse Striped. This bird is one of the ſmalleſt of the Dove kind. The bill, which is ſhaped as in the reſt of the pigeon tribe, is of a light horn-colour; from the noſtril to the eye, and round the latter, runs a narrow white ſtroke; the irides are a blue grey; the forehead round the eyes, the cheeks, and parts under the bill, are light blue; the crown and hinder part of the head are red, or rather ruſſet; the fore-part of the neck, the breaſt, the belly, and the thighs, are a faded roſe or bloſſom-colour; the feathers under the tail are white; the ſides of the neck, and of the body under the wings, are blueiſh, thick ſet with very fine tranſverſe lines of a darker hue; the upper ſide of the back, the neck, the wings, and the tail, are cinereous; the hinder part of the neck, the back, and covert-feathers of the wings, are marked with very diſtinct black tranſverſe lines, which are continued from wing to wing acroſs the back, with ſmall interruptions; the greater quills are ſomewhat darker than the coverts of the wings; the tail is more duſky than the body, it's tip, for about an inch deep, being white; the legs and feet are a pale red; and the claws are brown. This Dove, which is a native of the Eaſt Indies, was firſt deſcribed by the accurate Edwards, who copied it from a living ſubject in the poſſeſſion of Sir Charles Wager.

Dove, Greenland. This bird ſeems to be a ſpecies of diver, or the colymbus grylle of Linnæus. The bill is an inch and a half long, ſtraight, ſlender, and black; on each wing there is a large bed of white, which in young birds is ſpotted; and, except the tips of the leſſer quill-feathers, and the interior coverts of the wings, which are white, the reſt of the plumage is black. In winter it is ſaid to change to white; and a variety, ſpotted with black and white, is frequently ſeen in Scotland. The tail is compoſed of twelve feathers; and the legs are red.

Theſe birds, which are always ſeen hovering over the ſea except during their breeding ſeaſon, frequently elude the ſkill of the beſt markſman, on account of their dexterity in diving under the water. The Welſh denominate this bird the caſgan-llongwr, or the ſailor's hatred, from a ſuperſtitious notion that it's appearance always indicates an approaching ſtorm. It viſits the iſle of St. Kilda, one of the Hebrides, in the month of March; and conſtructs it's neſt under ground, where it lays one greyiſh egg, marked with cineritious ſpots.

Dove, Brown Indian. This bird, which is about the ſize of the ſmall white Dove, is commonly bred in a cage. The bill is of a duſky black colour; the circle round the eyes is a very bright ſcarlet inclining to gold; beyond which there is a fine blue incloſure, which joins to the corners of the mouth, and terminates backwards in angles a little behind the eyes. The fore-part of the head, the neck, and the breaſt, are a light yellowiſh brown; and the hinder part of the head and the neck are a darker brown. Beneath the ears, on each ſide, there is a long black ſtroke tranſverſely placed, and compoſed of very ſhort plumage, the feathers beneath theſe marks having a greeniſh and golden luſtre by turns when viewed in different lights; and the remainder of the hind-part and ſides of the neck have a purpliſh gloſs. The upper part of the back, the covert-feathers of the wings, and ſome of the dorſal quills, are a dark reddiſh brown, varying ſometimes to a blueiſh caſt; the greater quills are black, with lighter coloured tips; the middle quills are of the ſame hue, with pretty deep white tips; and the coverts of the quills have alſo deep tips of white, which form an oblique tranſverſe bar. The inſides of the wings, the belly, and the covert-feathers under the tail, are a light blueiſh aſh-colour; the lower part of the back, and the upper covert-feathers of the tail, are a dark aſh-colour; the two middle feathers of the tail are of the ſame brown hue with the back and wings; the other feathers on each ſide are a dark cinereous colour, with white tips about an inch deep; the legs and feet are covered with red ſcales; and the claws are brown. The Brown Indian Dove is a native of the Eaſt Indies.

Dove, Violet, Red-Headed, of Sonnerat. This ſpecies, which inhabits the iſle of Antigua in the Oriental ocean, is about the ſize of the pigeon called jacobin by French naturaliſts. A fleſhy membrane of a vivid red colour extends on each ſide of the head from the baſe of the bill beyond the eye, which it encircles; the top of the head is covered with a fine plumage which forms a kind of bright red cap; the neck, the top of the back, and the beginning of the breaſt, are a blueiſh grey, which becomes more bright on the lower part of the breaſt; the back, the belly, the wings, and the tail, have the appearance of black velvet, which changes to purple, and reflects a blueiſh tinge; the feet and beak are grey; and the irides are compoſed of a large red circle, and one more narrow which is grey.

Dove, Green, of Sonnerat. The head of this ſpecies, which is about the ſize of the European wood-pigeon, is of a greyiſh cinereous hue, and the neck a bright lilach. There is a large orpine-coloured ſpot on the breaſt; the coverts of the wings are an apple green encompaſſed by a longitudinal yellow ſtreak on the outer ſide; the greater quills of the wings and the tail are black; the belly is a yellowiſh green; the beak is ſhort and greyiſh; the irides are a ſky-blue ſurrounded with a reddiſh circle; and the feet are of a dull golden colour. This beautiful bird, which is a native of the iſle of Luçon, was firſt deſcribed by Sonnerat in his Voyage to New Guinea.

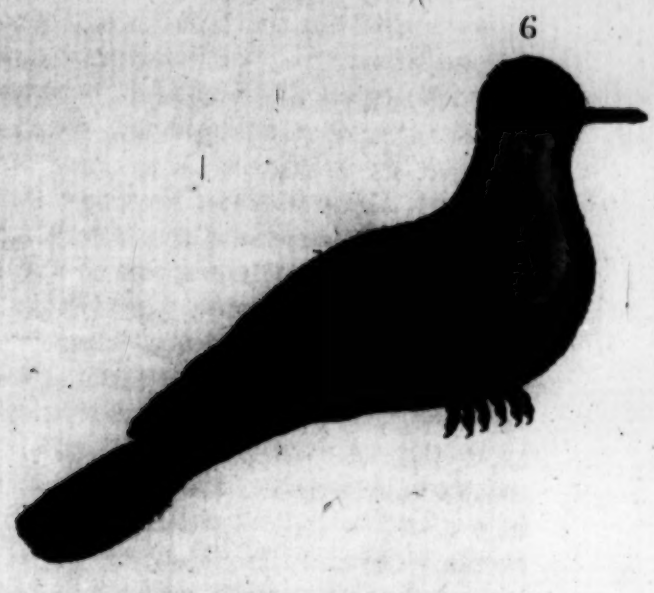
DOVELLA. An appellation given by ſome naturaliſts to the fiſh called donzellina by the Italians; and, according to Artedius, a ſpecies of the labrus; which author diſtinguiſhes it by the name of the variegated labrus with two large teeth in the upper jaw.

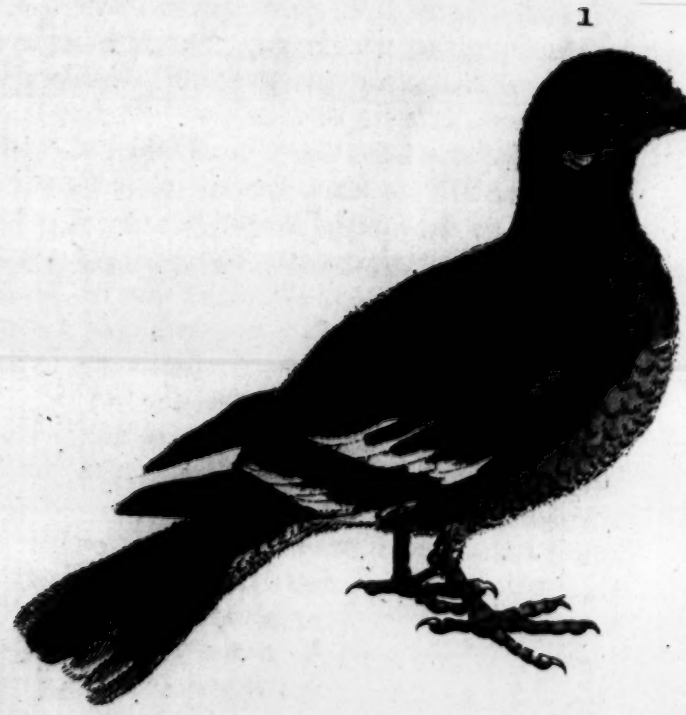
DOZELLINA. An appellation given by ſome naturaliſts to the common muſtella, known in England by the names of the ſea-loche and whiſtle-fiſh.

DRACÆNA. A ſpecies of American lizard.

DRAGON. A fabulous animal which credulity has repreſented under the ſimilitude of a ſerpent with wings and feet. The ancients have given a variety of deſcriptions of this imaginary creature, and aſcribed to it very numerous and contradictory qualities; to all which they were probably led by ſome extraordinary animals of the ſerpent kind, whoſe ſingularity, ſize, or figure, attracted their attention, and gave ſcope to their invention.

DRAGON-FLY. A numerous genus of four-winged flies, belonging to the order of neucoptera in





1. BROWN INDIAN DOVE. 2. GREEN DOVE. 3. GREEN WINGED DOVE. 4. LONG TAILED DOVE.
5. TRANSVERSE STRIPED DOVE. 6. VIOLET RED HEADED DOVE.

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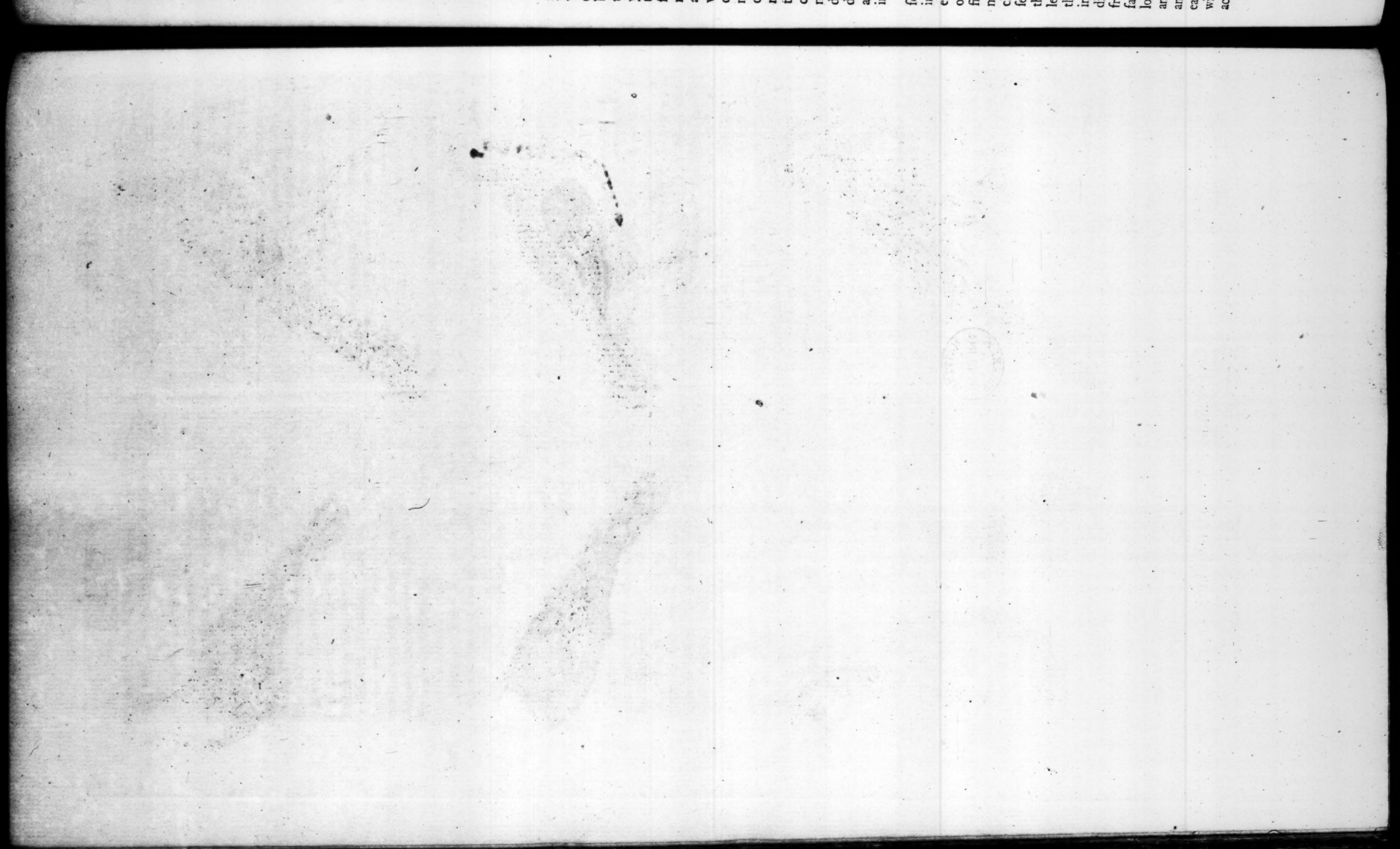


in the Linnæan ſyſtem; and known in England by the name of Adder or Dragon Flies. The characters are theſe: they are furniſhed with jaws; the antennæ are ſhorter than the thorax; the wings are extended; and the tail of the male is terminated by a kind of hooked forceps.

Theſe inſects are the moſt various as well as moſt beautiful of all the Flies which either adorn or diverſify the face of nature; they are of green, blue, white, crimſon, and ſcarlet colours: in ſome a variety of the moſt vivid tints are united; and even all the combinations of ſhades to be found in the rainbow are ſometimes exhibited in one ſingle animal. They are eaſily diſtinguiſhed from all other inſects by the length of their bodies, the largeneſs of their eyes, and the beautiful tranſparency of their wings. In ſummer, they are ſeen flying with great rapidity near almoſt every hedge and ſtream: they ſometimes ſettle on the leaves of plants, when an attentive obſerver may contemplate their beauties; and at other times they continue on the wing for hours together, without diſcovering the ſmalleſt ſigns of laſſitude. Though there are various ſpecies of this genus, they all agree in the moſt ſtriking parts of their hiſtory; and therefore one general deſcription will ſuffice to diſplay the nature of the whole.

All theſe Flies are produced from eggs depoſited in the water, where they remain for ſome time without any ſeeming life or motion. They are ejected from the female in cluſters reſembling bunches of grapes; and, ſinking to the bottom by their ſpecific weight, continue in that ſtate till the young ones acquire ſtrength ſufficient to break their ſhells, and to ſeparate from each other. The form under which they firſt indicate ſigns of animation is that of a ſix-legged worm, which bears a ſtrong reſemblance to the Dragon Fly in it's winged ſtate, except that the wings ſtill remain concealed within a ſheath peculiar to this animal, folded up into each other; while all the colours and varieties of painting appear tranſparent through the ſkin. After quitting the eggs, theſe animalcules continue in the water, where they creep and ſwim about with a kind of deliberate motion. Being very quick-ſighted, they inſtantly deſcend to the bottom on the ſmalleſt approach of danger; in which ſituation they ſubſiſt on ſoft mud, and whatever glutinous or earthy ſubſtances come in their way.

On the arrival of that period in which the tranſformation of this inſect from it's reptile to it's flying ſtate commences, it withdraws from the liquid element to ſome dry ſituation, among graſs, wood, or ſtones, where it fixes it's acute claws with great firmneſs, and for a ſhort time remains wholly immoveable, as if contemplating it's approaching change. Soon afterwards, the ſkin firſt divides itſelf on the head and back, from which opening the real head and eyes appear; and, laſtly, the ſix legs; while, in the mean time, the hollow ſlough of the legs continues to adhere to it's place. The incloſed animal then creeps forwards by degrees, diſengaging firſt it's wings, and then it's body, from the ſurrounding ſkin; and, proceeding a little farther, again reſts for ſome time as if diveſted of locomotion. The wings, which before were moiſt and folded, begin gradually to expand themſelves, and to ſmoothe thoſe plaits which are placed againſt each other like a cloſed fan. The body is likewiſe inſenſibly extended, till each of the limbs acquires it's proper ſize and dimenſions; all which ſurprizing and difficult operations are effected by the energy of the blood and the circulating humours.

The inſect being at firſt incapable of uſing it's new wings, it is therefore under the neceſſity of remaining in the ſame place till it's limbs are dried by the ſurrounding air. However, it is ſoon capacitated to enter on a more noble ſphere of life than it had hitherto enjoyed; and, from creeping ſlowly, and living accidentally, it now wings the air, and ſelects it's food from the various ſtores of nature. Indeed, no animal is more amply fitted for motion, ſubſiſtence, and enjoyment, than the Dragon Fly; in order to which, nature has furniſhed it with two large eyes, which occupy almoſt the whole ſpace of the head, and reſemble ſhining mother-of-pearl. It has four expanſive wings, with which it can turn itſelf with prodigious velocity; and, in order to aſſiſt theſe, it is furniſhed with a very long body, which directs it's motions after the manner of a rudder.

The wings of theſe inſects being long, and their legs ſhort, they ſeldom walk, but are generally obſerved either at reſt or in the act of flying: for this reaſon alſo they always alight on dry branches or ſhrubs; and, when they have ſufficiently refreſhed themſelves, purſue their erratic way. Thus they adorn the moſt delightful ſeaſon of the year with a profuſion of beauty, lightly traverſing the air in a thouſand directions, and expanding their moſt charming tints to the beams of the ſun. The gardens, the foreſts, the hedges, and the rivulets, are animated by their ſports; and perhaps there are but few individuals, whoſe early years have been ſpent in the country, who have not at intervals amuſed themſelves with the purſuit of ſome of theſe beautiful inſects. But while they appear to us ſo idly and innocently employed, they are in reality the greateſt tyrants of the inſect tribes; and, like the hawk among other birds, are only perambulating the aerial regions in queſt of prey. They are among the ſtrongeſt and moſt courageous of all winged inſects; nor is there one, however large, that they will not attack, and frequently with ſucceſs: the blue-fly, the bee, the waſp, and the hornet, are their conſtant prey; and even the butterfly, with all it's expanſion of wing, is often arreſted by them, and ſacrificed without mercy. Their appetite ſeems to be unbounded; they ſpend whole days in purſuit of other inſects; and have been frequently known to devour three times their own bulk in the ſpace of a ſingle hour. When flying, they dart ſuddenly on their prey, ſeize it with their ſix claws, and eaſily tear it to pieces with their teeth, which are capable of inflicting very dangerous wounds.

However, male Dragon Flies do not continue on the wing for the ſole gratification of the appetite of hunger; they are alſo extremely ſalacious, deſiring the females with great ardour. When the vernal ſun begins to warm the face of nature with his genial beams, the males are aſſiduouſly employed in ſeeking their mates; and no ſooner does a female appear, than two or three males purſue her, and endeavour to captivate her by all the little arts and kindneſſes of which they are capable. The inſtrument of generation in the male is very differently ſituated from that of any other inſect, being placed immediately under the breaſt, and conſequently, at firſt view, appearing wholly incapable of coming in contact with the ſexual part of the female; which, as in other inſects, lies in the tail. To effect this junction, however, nature has

taught the male a very peculiar mode of procedure: and Homberg, of the Pariſian Academy, who has furniſhed us with many remarkable particulars relative to theſe animalcules, thus deſcribes the whole proceſs of this ſtrange contact. 'As ſoon as the male perceives his mate, and finds himſelf ſufficiently near, he ſeizes on the back of her head by ſurprize; and darting his claws into it, twiſts his forky tail round her neck, and in this manner fixes himſelf ſo very firmly and cloſely, that no efforts of the female can diſengage him. In vain does ſhe fly from one branch to another; he obſtinately maintains his hold, often for two or three hours ſucceſſively. When he flies, ſhe is alſo conſtrained to fly with him, but he appears to be the ſole director of the way; and though her wings ſeem to be in motion, ſhe is nevertheleſs guided ſolely by his movements. As yet, however, the buſineſs of impregnation is unaccompliſhed, for to this the female muſt contribute. Wearied with importunity, ſhe ſeems at laſt to comply; and, inclining the end of her tail to that part of the male's breaſt in which the inſtrument of generation is placed, both members meet, and the eggs of the female receive the neceſſary fecundation: in the ſpace of an hour or two afterwards, ſhe flies to ſome neighbouring pool, in order to depoſit them; and in this ſituation they continue in a reptile ſtate for a whole year; after which they aſſume the beautiful colours of the winged parent.'

Linnæus, with his accuſtomed preciſion, divides Dragon Flies into the middle-ſized, the ſmall, and the great ſpecies; in each of which claſſes he deſcribes ſeveral varieties.

Dragon Fly, with a ſilky, ſhining body, and wings of a yellowiſh duſky colour; termed by Ray the middle-ſized libella with a blueiſh green body, and dun wings without ſpots. This inſect, which frequents the ſides of rivers, is of a blueiſh colour inclining to black; and the wings are a yellowiſh brown, without any of thoſe ſpecks on their external edges which are uſually ſeen in the other kinds.

Dragon Fly, with a blue ſhining body, and wings of a blueiſh green, duſky at the points, and without ſpots on the edges; called by Ray the middle-ſized libella with a blue body, and the greateſt part of the wings of a blackiſh blue colour. This ſpecies, which frequents rivers, is in figure like the former, except that the wings are a blackiſh blue, with pale brown tips; and that the tail is corneous at the extremity.

Dragon Fly, with a greeniſh blue body, duſky wings, and white ſpots on their edges; called by Ray the middle-ſized libella with a green body, and wings of a dun-colour marked with ſmall white ſpots near the extreme angle. The body is a lucid green; the feet are black; and the wings are brown, and marked on their edges with white oblong ſpots. Some naturaliſts have ſuppoſed this inſect to be the female of the preceding ſpecies.

Dragon Fly, with a ſilky ſhining body, and the wings of a duſky gold colour marked with black ſpots; termed by Ray the middle-ſized libella, with a body partly green, and partly blue; and the wings marked in the middle with very large blueiſh black ſpots. The body is a bright blue; the feet are black; half of the wings next the point are a blueiſh black; the points are a gilded brown; and the other half of the wings near the baſe are a gold-colour.

The foregoing ſpecies are all of the middle ſize. The following are of the ſmall claſs.

Dragon Fly, with a ſilky body, and the wings marked on their edges with duſky ſpots; called by Ray the leſſer libella with reticulated wings, a green back, and whitiſh furrows. The back of this inſect, which flutters on the ſides of marſhes, is of a copper colour; the wings, which ſhine as if gilded, and are marked on the edges with rhomboidal brown ſpots, are compoſed of two nerves peculiar to this ſpecies; the breaſt, belly, and ſides, are of a livid colour; the eyes are cinereous, but brown above; the head, as far as the back, is of a copper hue; and the antennæ are black, ſhort, and clubbed at the laſt joint.

Dragon Fly, with a fleſh-coloured body, and wings having duſky ſpots on their edges; termed by Ray the middle-ſized libella, with two black ſpots near it's inciſures. This ſpecies greatly reſembles the preceding both in ſize and ſhape; but near the furrows of the belly there are black lines or characters, and browniſh ſpots on the edges of the wings.

Dragon Fly, with a ſilky body, and the edges of the wings marked with black ſpots; called by Ray the libella with a blueiſh livid body. The wings of this ſpecies are white; and the upper part of the body is of a greeniſh ſhining blue.

Dragon Fly, with a blue body variegated with cinereous, and black ſpots on the edges of the wings; named by Ray the leſſer libella with ſhort wings, and a blue body marked with tranſverſe black ſpots. The ſize and ſhape of this inſect reſemble thoſe of the preceding; but the wings are white; and the joints of the belly, when viewed before, are cinereous; but, when ſeen behind, of a ſhining blue.

The following are of the large claſs of Linnæus.

Dragon Fly, with double ſpots on the edges of the wings; called by Ray the greateſt libella, with a long, ſhining, ſlender, ſmooth, greeniſh belly, at the beginning, but becoming more tumid near the end. This ſpecies is diſtinguiſhed from all the others by two ſpots on the wings, which are white, except towards their baſes, where they are yellow, and underneath them of a blackiſh hue.

Dragon Fly, with white wings, but yellow at their baſes; termed by Ray the greateſt libella, with a broad, ſhort, yellow belly. This inſect is yellow on the back, and black underneath; and on each ſide there are two oblique yellow lines. The forehead is green; the eyes are grey; the feet are black; and the wings, at their baſes, are ruſt-coloured.

Dragon Fly, with a duſky body and white wings; called by Ray the greateſt libella, with a yellow, narrow body; but having no duſky ſpots at the baſes of the wings. The body of this ſpecies is black; the wings are white, with reddiſh brown ſpots on their edges; and the vent is deſtitute of any appendage.

Dragon Fly, with yellow ſides and white wings. This variety is commonly ſeen ſporting on the water. The ſides of the breaſt and belly are of a yellow colour; and the ſpecks on the edges of the wings have a brown ruſty hue.

Dragon Fly, with a green ſhining breaſt, yellow lines, pale wings, and a duſky belly; called by Ray the great libella with a ſhort blue belly. The head and breaſt are of a lucid green colour; the eyes are brown; there are two yellow lines on the

ſides

ſides of the breaſt; the wings are a whitiſh yellow at their baſes; and the marginal ſpots are brown.

Dragon Fly, of a gilded green colour, with pale wings and black feet. This ſpecies reſembles the former, except that the tail of the male is dentated, that of the female being compoſed of leaves ſhaped like lances.

Dragon Fly, with yellowiſh wings, the ſides of the breaſt marked with yellow lines, and the tail compriſed of two leaves; called by Ray the libella with a long ſlender body and yellowiſh wings. As to any farther deſcription of this ſpecies, naturaliſts are ſilent.

DRAGON-FISH. The Dragon-Fiſh, which is a ſpecies of the trachinus or cottus, is commonly known in England by the name of the weever, which ſeems to be a corruption of the French la vive; ſo called, according to Bellonius, from it's being capable of ſubſiſting a conſiderable time out of it's native element. It frequently grows to the length of twelve inches. The irides are yellow; the under jaw is longer than the upper, ſloping very much towards the belly; and the teeth are ſmall. The back is ſtraight; the ſides are compreſſed; the belly is prominent; the lateral line is even; and the covers of the gills are armed with very ſtrong ſpines. The firſt dorſal fin is compoſed of five very ſtrong ſpines, which, as well as the intervening membranes, are tinged with black; and the ſecond conſiſts of ſeveral ſoft rays, commencing juſt at the end of the firſt, and continuing almoſt to the tail. The pectoral fins are broad and angular, and the ventral ſmall; the vent is placed remarkably forward; the anal fin extends to a ſmall diſtance from the tail, and is a little hollowed in the middle; the ſides are longitudinally marked with two or three dirty yellow lines, and tranſverſely by numbers of ſmall ones; and the belly is of a ſilvery hue.

The qualities of the Dragon-Fiſh ſeem to have been well known to the ancients, who have enumerated them without exaggeration. The wounds inflicted by it's ſpines, which are exceedingly painful, are ſometimes attended with a violent inflammation and moſt pungent ſhooting; and, at others, with very malignant ſymptoms. According to the opinion of the vulgar, theſe diſagreeable preſages do not originate from the ſmall wound which this fiſh is capable of inflicting, but a certain venom proceeding from the animal itſelf. Whether this opinion is founded in truth or conjecture, we have not been able to aſcertain. In order, however, to a curé, ſome fiſhermen rub the part affected for a conſiderable time with ſea-ſand; and others, with ſtale urine warmed: but ſhould the wound become dangerous either from the neglect or conſtitutional infirmities of the patient, the application of ſweet oil, and the internal uſe of opium and treacle, are judged expedient.

This fiſh buries itſelf in the ſand, leaving only it's noſe uncovered; and, notwithſtanding the foregoing noxious quality aſcribed to it, the fleſh is reckoned pleaſant and ſalubrious.

DRAGON-SHELL. An appellation given by the virtuoſi to a ſpecies of concamerated patella, or limpet. The top is much bent, and externally cinereous, but internally of a bright and elegant fleſh-colour. It is frequently found ſticking to the back of a tortoiſe, as common limpets adhere to the ſides of rocks; and ſome have been found affixed to large ſhells of the pinna marina brought from the Eaſt Indies.

DRAGONET. Linnæus has given this genus the name of callyonymus, a fiſh mentioned by ſeveral of the ancients; but their deſcriptions of it are ſo very incompleat, as to render it impoſſible to determine with certainty what ſpecies they intended. The ingenious Pliny makes it ſynonymous to the uranoſcopus, very frequent in the Italian ſeas, but extremely different from our Dragonet, which term is uſed to expreſs the dracunculus of Rondoletius and others. This fiſh is found as far north as Norway and Spitzbergen, and as far ſouth as the Mediterranean ſeas; but it is frequently caught on the Yorkſhire coaſts; and is ſometimes found in the ſtomach of the cod.

Dragonet, Common. This ſpecies, to which Pennant gives the epithet of gemmeſus, grows to the length of ten or twelve inches. The body is ſlender, round, and ſmooth; the head is large, and depreſſed at the top; and in the hind-part there are two orifices, through which it breathes, and ejects the water received by it's mouth after the manner of ſetaceous fiſhes. The apertures of the gills are cloſed; and on the end of each of the bones which covers them there is a very ſingular trifurcated ſpine. The eyes are large, and placed near each other on the ſuperior part of the head; the pupils are of a rich ſapphirine blue colour, and the irides a fiery carbuncle. The upper jaw projects much farther than the lower; the teeth are very minute; and the mouth is uncommonly large. The pectoral fins are roundiſh, and of a light brown hue; and the ventral ones, which are placed before them, are very broad, and conſiſt of five branched rays. The firſt ray of the dorſal fin is ſetaceous, and extends almoſt to half the tail; but the rays of the ſecond dorſal fin are of a moderate length, except the laſt, which is protruded far beyond the others. The anus is ſituated near the centre of the belly; the anal fin is broad, of which the laſt ray is the longeſt; the tail, which is rounded and long, conſiſts of ten rays; the lateral line is ſtraight; and the membranes of all the fins are extremely thin and delicate. The colours of this fiſh, which are yellow, blue, and white, exhibit a very beautiful appearance: the blue in particular is inconceivably ſplendid, and glows with a brilliancy little inferior to that of the diamond.

Pontoppidan calls this ſpecies the flying fiſh; but whether it makes uſe of any of it's fins to raiſe itſelf out of the water, as he ſeems inclined to believe it does, we have not been able to determine with certainty.

Dragonet, Mean. This ſpecies is greatly inferior to the former with reſpect to the beauty of it's colours; being of a dirty yellow hue, mixed with white and duſky ſpots; and the belly is entirely white. It grows to the length of ſix inches and a half. The head is compreſſed; the forehead ſlopes down to the noſe; the eyes are large, and almoſt contiguous; the mouth is ſmall; and the teeth are very minute. Over the gills there is a ſtrong broad trifurcated ſpine; the firſt dorſal fin has four rays, and the ſecond ten; the pectoral fins conſiſt of twenty rays of a ferruginous colour ſpotted with a deeper tinge of the ſame; and the ventral of five broad branched rays, reſembling thoſe of the common Dragonet. The anal fin, which is white, has ten rays; and the tail has the ſame number. In both ſpecies they are trifurcated at their extremities; and the ray next the anal fin is very ſhort in both.

DRAGOON. The name of a ſmall bird of the

the carrier-pigeon kind, called by Moore columba tabellaria minima. It ſeems to be a mongrel breed between the tumbler and the horſeman ſpecies. This race increaſes prodigiouſly; and as it is lighter than the horſeman, it is ſuppoſed to fly ſeveral miles with more expedition, though the former outſtrips it at laſt. One of theſe pigeons, it is ſaid, flew from St. Edmundſbury to London, being ſeventy-two miles, in the ſpace of two hours and a half.

DRILL. An appellation given by Purchas to the ourang-outang, or wild man of the woods. See APE, GREAT.

DROMEDARY. An animal of the camel kind, from which it is diſtinguiſhed by having only one bunch on it's back. It's hair is ſoft to the touch, and ſhorter than that of the ox, except on the head, throat, and top of the neck, where it is conſiderably longer. On the middle of the back alſo there are hairs nearly a foot in length, which, though naturally ſoft and flexile, yet ſtanding in an erect poſture, form the moſt conſpicuous part of the bunch; but, when removed by the hand, the fleſh ſcarcely appears more prominent than on the back of the hog. The head is ſmall in proportion to the body; the upper lip is divided like that of the hare; the feet are each terminated by two ſmall claws; and the ſoles of the feet are broad, very fleſhy, and ſoft to the touch, though the ſkin is extremely hard and callous. There are calloſities on the knees, the ſhoulders of the fore-legs, and on each of the hinder ones; and beſides theſe, another much larger adheres to the breaſt, on an eminence which ſeems formed by nature to ſupport it: theſe calloſities appear as if intended for the ſupport of the animal's ponderous body when it either ſtoops to reſt or to be loaded. The ſtomach is very large; and, as in other ruminating animals, is divided into four parts: but it's ſtructure is extremely ſingular; for, at the upper end of the ſecond ventricle, there are ſeveral ſquare holes, which are the orifices of a great number of bags placed between the membranes which compoſe the ſtomach; and theſe ſeem to be the receptacles of water kept for emergencies; the creature drinking a vaſt quantity at once, and then ſubſiſting for ſeveral days, on particular occaſions, without any other fluid.

Dromedaries being naturally very ſwift, they are frequently trained by the Arabians to racing, and ſometimes to carry meſſengers with diſpatches, who, by their means, can travel upwards of one hundred miles daily, for nine days ſucceſſively, over burning deſarts impaſſable by any other animals.

DRONE. The name of a large kind of bees, ſuppoſed to be the males of the ſwarm, which being unprovided with the neceſſary apparatus, never go in ſearch either of wax or honey, but live on the ſtores collected by the reſt. The common working-bees are generally conſidered as being neutral: and there is uſually only one female in a hive; for, from numerous recent experiments, there is reaſon to conclude that the queen bee only lays two kinds of eggs, namely, ſuch as are to produce Drones, and thoſe from which the working-bees are to proceed.

This larger ſpecies of bees, called Drones, may be eaſily diſtinguiſhed from the working tribes, by being nearly double their ſize. Their heads are round, their eyes are full, their tongues are ſhort, and their bellies are broader and more obtuſe than thoſe of the other claſſes: they are alſo of a darker hue, and make a louder noiſe in flying, by which they may be diſtinguiſhed though unſeen; and they are deſtitute of ſtings, which the honey-bees are univerſally known to poſſeſs.

On diſſecting a Drone bee, there appear the moſt inconteſtible proofs that it belongs to the maſculine gender. In this creature there is no appearance either of ovaries or eggs, nor any traces of the internal conformation of the labouring bees; but the whole abdomen is filled with tranſparent veſſels, winding about in various ſinuoſities, and containing a white or milky fluid plainly anomalous to that found in the males of other animals, which is deſtined to impregnate the eggs of the females: and this whole apparatus of veſſels, which bears a ſtrong reſemblance to the convolutions of the ſeminal veſſels in other creatures, is evidently intended for the preparation and retenſion of this matter till the appointed time of it's emiſſion. At the extremity of the laſt ring of the body, in the female, and in the working-bees, is placed the aperture of the anus, from which the ſtings of the latter are alſo protruded: but, with reſpect to the Drone, or male bee, the caſe is very different; for the extremity of that ring is cloſed, and the aperture of the anus is ſituated in the under part of it, about it's middle. On ſqueezing the body of the Drone, the penis is alſo forced out at this opening; which member is a ſmall, ſlender, fleſhy body, contained between two horns of a ſomewhat harder ſubſtance, which unite at their baſes, but gradually diverge as they increaſe in length. When the preſſure is long continued, there are thruſt out at the ſame aperture ſome of the ſeminal veſſels, and finally part of the milky fluid is extravaſated; but this ſeems rather to flow from ſome lacerated veſſel, than from any natural evacuation. Theſe parts obſerved in all Drones, and in no other kind of bees, ſeem ſatisfactorily to evince the difference of ſex. But one thing farther deſerves to be remarked, namely, that though the penis evidently appears from the effect of preſſure, it is with difficulty diſcovered on diſſection; the reaſon of which ſeems to be their ſwelling when expoſed to the air: and the penetrating Swammerdam ſuppoſes that, in order to this end, theſe members are furniſhed with a great number of tracheæ, which readily admit the air as ſoon as they are expoſed to it's effects.

But though Maraldi, as well as Swammerdam, diſcovered in the ſtructure of Drones ſome reſemblance to the male organs of generation, and from thence referred them to the maſculine gender; neither of theſe accurate and ingenious obſervers could ever notice them in the act of copulation: and the latter, for that reaſon, entertained a notion that the female, or queen bee, was fecundated without copulation; that it was ſufficient for her only to approach the male; and that her eggs were impregnated by a kind of vivifying aura exhaled from the body of the male, and abſorbed by that of the female. However, Reaumur imagined that he had diſcovered the actual copulation of the Drone with the female bee, and accordingly minutely deſcribed the proceſs in his Hiſtory of Inſects.

Notwithſtanding theſe obſervations, many of the ancients, as well as the moderns, have imagined that the eggs of the female bee are not impregnated with the male ſperm, while in the ovaria of the inſect; but that they are depoſited, unimpregnated, in the cells; and that the male afterwards

wards ejects the male ſperm over them, in the ſame manner as the generation of fiſhes is performed by the male's impregnating the ſpawn after it is emitted by the female. Maraldi, indeed, long ſince conjectured that this might be the caſe; and he was confirmed in his ſuppoſition by obſerving that a liquid whitiſh ſubſtance ſurrounded each egg at the bottom of the cell in a ſhort time after it had been depoſited; and that a great number of eggs, which had not been bedewed with this liquor, remained barren in the cells.

This method of impregnation has lately been eſtabliſhed, beyond all contradiction, by the obſervations of Mr. Debraw of Cambridge. That gentleman having put ſome bees into a glaſs hive, together with a large number of Drones, obſerved, on the firſt or ſecond day from the time that the eggs were depoſited in the cells, which the queen generally lays on the fourth or fifth after being hived, that a great number of bees affixed themſelves to each other, and formed a kind of curtain from the top to the bottom of the hive, probably in order to conceal the proceſs of generation: however, he ſoon perceived ſeveral bees, whoſe ſize he was able to diſtinguiſh, inſerting their poſteriors, each into a cell, and ſinking into it; but in a ſhort time they retired, when he obſerved a ſmall quantity of whitiſh liquor left in the angle of the baſe of each cell, containing an egg; which liquor was leſs liquid than honey, and poſſeſſed no real ſweetneſs. In order to a farther elucidation of the fact, that the eggs were thus fecundated by the males, Mr. Debraw pitched on a ſwarm; and having ſeparated the Drones, by ſhaking all the bees into a veſſel full of water, and there leaving them till they were become quite ſenſeleſs, replaced the working animals, together with their queen, as ſoon as they were recovered, by ſpreading them on brown paper, placed in the ſun, within a glaſs hive. The queen very ſoon laid her eggs; ſome of which, at the end of twenty days, were hatched into bees; others withered away; and ſeveral of them were encruſted with honey. Suſpecting that ſome of the males, having eſcaped his notice, had impregnated only a certain part of the eggs, he was anxious to aſcertain the fact; and, to that end, he removed all the brood comb which was in the hive, and determined to watch the motions of the bees after new eggs were depoſited in the cells. On the ſecond day he perceived the operation commence; and, on taking out a piece of the comb containing two of the bees which had thruſt their poſteriors into the cell, he examined them, and found that they were deſtitute of ſtings; and on diſſecting them, by the aſſiſtance of a microſcope, he diſcovered the four cylindrical bodies, containing the whitiſh fluid previouſly mentioned, which Maraldi obſerved in the large Drones.

On a ſubſequent experiment, this gentleman having ſeparated from the ſame parcel of bees all ſuch as were deſtitute of ſtings, he found no leſs than fifty-ſeven of the number exactly of the ſize of common bees; which having preſſed to death between his fingers, they yielded a ſmall quantity of whitiſh liquor; after which he placed the remainder of the ſwarm in the hive. On the fourth or fifth day, the queen bee depoſited the eggs in the cells, but no part of the proceſs of impregnation could be diſcovered: the eggs, after the fourth day, inſtead of changing in the manner of caterpillars, remained in their original ſtate, except that ſome of them were covered with honey; all the bees forſook the hive, and attempted to get into another place in it's vicinity, probably in queſt of males; but the queen loſt her life in this unequal conflict.

Mr. Debraw afterwards made another experiment, which may be conſidered as abſolutely concluſive on this ſubject. He placed a certain part of the unimpregnated brood-comb under a bell glaſs, in which he confined a queen, and ſome common bees unaccompanied by any Drones; and the other part he put under another glaſs bell, with a few Drones, a queen, and a number of common bees. In the former glaſs the eggs remained in the ſame ſtate, without any ſigns of impregnation; and when the bees were releaſed on the ſeventh day, they all flew away. The Drones, in the other glaſs, were obſerved to impregnate the eggs in every cell on the firſt day after they were put in; the bees remained in the hive; and, in the ſpace of twenty days, every egg underwent the neceſſary transformations, and a numerous young colony was thus produced.

It has long ago been obſerved, both by Maraldi and Reaumur, that there are Drones of the ſame ſize with the common bees; but the late curious and intereſting experiments of Mr. Debraw, beſides aſcertaining this fact, have thrown new light on their importance and utility, and removed conſiderable difficulties which had obſcured the proceſs of generation among thoſe animals. It is well known, that the larger Drones never appear in the hive before the middle of April; and that, before the end of Auguſt, when the principal breeding ſeaſon terminates, they are no more, being deſtroyed, together with all their worms or nymphs, by the labouring bees, probably on account of ſaving the honey: and yet it is equally certain, that the bees begin to breed early in the ſpring, provided the weather is favourable; and that many broods are compleated before the Drones appear. But if the ſmaller-ſized Drones are ſuffered to remain, which in times of ſcarcity conſume leſs honey than the others, they anſwer the neceſſary purpoſes of impregnating the early broods, and the larger Drones are produced againſt the ſeaſon of pleaſure and plenty. On the other hand, theſe ſmaller Drones are all dead before the end of May, when the larger ones appear to ſuperſede their utility.

DRONE-FLY, or BEE-FLY. This inſect ſo greatly reſembles the common bee, that at firſt ſight they are not eaſily diſcriminated. There are, however, ſeveral diſtinguiſhing characteriſtics between the ſpecies: the Drone-Fly has only two wings; and it's body is ſhorter and thicker, and it's head conſiderably larger, than thoſe of the common bee. The Bee-Fly alſo invariably carries it's wings parallel in their poſition, but without it's body; whereas the bee uſually croſſes it's wings on it's back, and covers it's body with them: however, this is not an univerſal practice with reſpect to the wings of the bee, though it is certainly a very common one. The Bee-Fly frequents flowers as well as the bee; and though it refrains from the labour of collecting wax, it is furniſhed with a trunk by which it abſorbs honey: this trunk, which enables it to perform the operation, is deſtitute of teeth; and conſequently the inſect belongs to Reaumur's firſt general claſs of two-winged flies; and the conformation of it's body, which is ſhort and flat, refers it to his firſt ſubordinate genus of that claſs.

The moſt curious and extraordinary period of the life of this inſect, is that which it paſſes before commencing a denizen of the ſky. The uſual exterior form of the fly-worms of this genus was long ago ſufficiently known to the generality of naturaliſts; but they declined troubling themſelves with any minute inveſtigation of it, and appear indeed to have been ignorant that theſe creatures poſſeſſed ſeveral peculiarities worthy of attention. The ſubſtances among which they are found are the moſt offenſive and nauſeous; and the inſects, in this ſtate, belong to the claſs of thoſe with variable heads. But their grand diſtinction from all others conſiſts in their long and ſlender tails, which at different periods appear of diſtinct lengths; yet they are invariably longer than their bodies, round, ſmooth, extremely ſmall at their extremities, and ſomewhat reſembling thoſe of rats; whence the whole claſs has ſometimes received the appellation of rat-tailed worms.

But, in order to underſtand the eſſential properties of their tails, it is neceſſary firſt to acquire a knowledge of the worms themſelves. Theſe creatures having been uſually found on dry ground, and only accidentally obſerved for a great number of years, prepoſſeſſed mankind with a notion that they were far leſs numerous than they really are; nor had any idea occurred that they inhabited the water. However, on examining veſſels of that fluid in a corrupted and ſtinking ſtate, they have been there found in great numbers, lying among the mud at their bottoms; and, on being removed, and immerſed in water of a purer nature, they have ſoon evinced the neceſſity and utility of their long tails.

Notwithſtanding theſe worms are capable of living in mud under water, it is certain that they are under a neceſſity of inhaling freſh air, like other water fly-worms: and to this eſſential purpoſe their long tails contribute; for while they lie buried in the ſoil, theſe members are extended upwards to the ſurface of the water; and, having apertures at their extremities, the air is thereby admitted into the bodies of the inſects. It is, indeed, very amuſing to obſerve theſe animals, after being put into water, quickly deſcending to the bottom, and as ſpeedily thruſting up the extremities of their tails to the outſide. From the circumſtance of their being able to reach the ſurface, though from whatever depth, we may rationally conclude that they are endowed with the faculty of extending their tails at pleaſure to any length: and the way to aſcertain this concluſion ſeems very eaſy, namely, by increaſing the depth of the water; for, as the worms delight to lodge at the bottom, if they are inclined to remain, they are ſpeedily compelled to lengthen their tails proportionably, in order to breathe from the ſurface. A repetition of this experiment will prove that each of theſe worms is capable of ſtretching it's tail to the length of five inches; an amazing extent for a creature whoſe body is not above half an inch; and the tail of which, in it's natural ſtate, does not much exceed that length. However, five inches is the utmoſt exertion of any one of theſe inſects in this action; and when the water in the veſſel is rendered deeper, they either quit the bottom, and crawl up the ſides to a proper height, or elſe continue to ſwim at the depth of five inches.

The organization of ſo remarkable a part of this animal as it's tail, cannot but appear to the curious as an object worthy their attention; and the natural tranſparency both of that and of the body of this inſect, muſt greatly facilitate the examination. Indeed, with reſpect to many of the younger of theſe worms, and ſuch of them as have not arrived at that ſtate in which they quit the water, the parts are almoſt as eaſily diſtinguiſhable within the body as if placed within a glaſs tube. It is no difficult matter, in every ſtate of this worm, to perceive that the tail is compoſed of two hollow tubes; one of which nicely fits, and is eaſily retracted within the other, or protracted, as the occaſions of the animal may require. The exterior, and conſequently the larger tube, ſeems to be an elongation of the fleſhy matter which forms the rings of the body: within this there is a ſmaller tube, chiefly of a blackiſh brown colour; and, by means of the variation in hue, they may be diſtinguiſhed from each other even when ſhut up. The interior tube may with propriety be called the tube of reſpiration, as it is capable of being lengthened or ſhortened for that purpoſe at pleaſure; the exterior one ſerving only for a caſe or ſheath. Nor is this all: it is eaſily known that theſe pipes are in themſelves capable of extenſion; by obſerving, that while the whole interior tube is lodged within the caſe, it is of no determinate length, but ſometimes long, and at others ſhort.

Numbers of the aquatic fly-worms do not quit the water till they arrive at their perfect ſtate; but this kind, as ſoon as they have acquired their proper growth, leave that fluid, and crawl abroad on the earth. Their bodies, in this new element, become dirty and greeniſh; and, when they have found a proper ſpot which is ſoft and moiſt, they there inhume themſelves; and, after undergoing their neceſſary transformations, burſt out in the ſhape of flies. Their changes are all accompliſhed under ſhells of their own ſkins, which in a few hours begin to harden, and by degrees become very firm; and they are remarkable for each having four horns, two longer and two ſhorter, placed in different directions near the head, which ſerve as the organs of reſpiration to the incloſed nymph.

There are ſeveral ſpecies of this genus of flies, no leſs different in their ſizes than in the worms from which they are produced: the largeſt of theſe are found in vaults and privies; and in winter vaſt numbers of them take up their abodes in the hollows of willows, and other trees which grow contiguous to rivers and marſhes.

DRONTE. See Dodo.

DUCK. A very large genus of birds of the order of anſeres. The characters are theſe: the beak is ſhorter in proportion than that of the gooſe, ſtrong, flat or depreſſed, and commonly furniſhed with a nail at the extremity. The feet are proportionably larger than thoſe of the gooſe kind, the middle toe being the longeſt; the legs are ſhorter, and placed farther backwards; the back is flatter; and the body is more compreſſed. The noſtrils are ſmall and oval; and the tongue is broad, the edges near the baſe being fringed. There are numerous ſpecies of this genus; ſome inhabiting the freſh water, and others the ſea.

Duck, Tame. Tame Ducks are reared with more facility than perhaps moſt other domeſtic animals. The very inſtincts of the young direct them to their favourite element; and though they are ſometimes hatched and conducted by hens, they ſeem to contemn the admonitions of their leaders; which circumſtance evinces that all birds receive their manners rather from nature than education. The falcon does not purſue it's prey becauſe it is thus taught

taught by the parent, but from the importunate cravings of it's appetite for animal food; the cuckow follows a very different way of life from that which it's nurſe is capable of teaching it; and birds of the Duck kind in particular follow their appetites rather than their tutors, and attain their various perfections without the help of any guide. The arts of man, indeed, are the reſult of accumulated experience; while thoſe of inferior animals are generally ſelf-taught, and unacquired by imitation.

Duck-eggs are uſually placed under a hen, becauſe that animal is ſuppoſed to hatch them better than the original parent. The Duck generally proves a heedleſs, inattentive mother; for ſhe frequently leaves her eggs till they become corrupted, and even ſeems to forget that ſhe is entruſted with the charge: ſhe is equally regardleſs of her young brood when they are produced; for ſhe only leads them forth to the water, and then ſeems to think that ſhe has made ſufficient proviſion for them. Whatever advantages might be ſecured by drawing near the houſe, or attending in the yard, ſhe declines them all; and will rather ſuffer thoſe vermin which uſually haunt the waters to deſtroy her brood, than be at the ſmalleſt pains in bringing them to a place of ſhelter and ſecurity. But, on the contrary, the hen, who is an indefatigable nurſe, broods with unwearied aſſiduity, and generally brings forth a chicken from every egg with which ſhe is entruſted: ſhe does not indeed conduct her young to the water, becauſe that is contrary to her nature; but ſhe always keeps a watchful eye over them when they ſtand on the brink. Should the rat or the weaſel attempt to ſeize any of them, the hen affords them inſtant protection; and, leading her ſuppoſititious brood to the houſe when tired with paddling, there nouriſhes them with all the inſtinctive ardour of maternal regard.

There are no fewer than ten different varieties of the Tame Duck; and Briſſon enumerates upwards of twenty of the wild. The moſt obvious diſtinction, however, between wild and Tame Ducks, lies in the colour of their feet; thoſe of the Tame being black, and the wild yellow.

The common ſpecies of Tame Ducks derive their origin from the mallard, and may be traced to that fowl by unerring characters. Though the drakes vary in colour, they all retain the curled feathers of the tail, and both ſexes the ſhape of the bill, peculiar to the wild kind. Nature, indeed, ſeems to ſport with the colours of all domeſtic animals, that mankind may with more facility diſtinguiſh and claim their reſpective property.

The mallard is uſually about twenty-three inches in length, thirty-five inches in breadth, and about two pounds and a half in weight. The bill is of a yellowiſh green colour; and the head and neck are a deep ſhining green. A circle of white ſurrounds the lower part of the neck, to about three-fourths of it's circumference; the upper part of the breaſt, and the beginning of the back, are a purpliſh red; the breaſt and belly are grey, marked with tranſverſe ſpeckled lines of a duſky hue; and the ſcapulars are white, elegantly barred with brown. The ſpot on the wing is a rich purple one; and the tail is compoſed of twenty-four feathers. The male of this ſpecies is diſtinguiſhed by four middle feathers, which are black and ſtrongly curled upwards; but the female is deſtitute of them. Their plumage is a pale reddiſh brown, ſpotted with black; and their legs are ſaffron-coloured.

Tame Ducks are extremely beneficial to mankind; and by no means chargeable, as they ſubſiſt on loſt corn, worms, ſnails, and other inſects. They lay a great number of eggs annually; and, when ſitting, require no manner of attendance, except that of throwing ſmall quantities of barley at times within their reach: and with reſpect to Ducklings, they may be fattened in the ſpace of three weeks with any kind of pulſe or grain, and plenty of water.

The veſſels of the Duck, eſpecially about the heart, are conſtructed in ſo particular a manner, as to enable it to live a conſiderable time, in the act of diving under water, without reſpiration. This peculiarity induced the ingenious Mr. Boyle to conſider it as a more proper ſubject for experiments, by means of the air-pump, than any of the feathered tribe: accordingly, a full-grown Duck having been put into the receiver of that inſtrument, of which ſhe filled a third part, and the air exhauſted, the creature appeared at firſt to ſuſtain the operation better than a hen, or any ſuch fowl, could poſſibly have done; but, after the lapſe of one minute, ſhe evidenced ſtrong ſigns of diſcompoſure; and, in leſs than two more, her head dropped, and ſhe appeared in a dying ſtate till revived by the admiſſion of a certain portion of air. Thus, whatever facility of diving the Duck and other aquatic fowls may poſſeſs, it does not appear that they can ſubſiſt without the means of reſpiration any longer than other animals. A young callow Duck was alſo tried in the ſame manner, and experienced the like effect, namely, that of being almoſt ſuffocated in leſs than two minutes. But it ought to be remarked, that both of the foregoing birds ſwelled ſo prodigiouſly, on the pumping out of the air, as to appear much larger, eſpecially about their crops, than they were naturally. It not being the ſeeming intention of Nature that any water-fowl ſhould ſubſiſt in an exceedingly rarified air, but only continue occaſionally under water; though ſhe has furniſhed them with faculties capable of performing the latter, ſhe has left them utterly impotent with reſpect to the former.

One of the moſt convincing inſtances of the Duck's being calculated to live in every ſituation, with reſpect to ſome of it's varieties, may be drawn from the hiſtory of the blind Ducks of the lake Zirchnitzer, in Carniola. It is now well known that this lake communicates with another under ground in the mountain Savornick, and is filled or emptied according to the quantity of water contained in the laſt; the waters of the ſuperior lake running off by vaſt holes in it's bottom. The Ducks, which are there very plentiful, are often carried down with the ſtream, and forced into the ſubterraneous lake by the ſtrength of the vortex; in which unnatural ſituation many of them unqueſtionably periſh, but thoſe which remain alive become blind, and loſe all their feathers; and, at the next filling of the lake, both they and vaſt quantities of fiſh are thrown up with the water. At this time they are very plump; and, being deſtitute of ſight, and conſequently incapable of avoiding danger, they are caught with facility. In the ſpace of fourteen days, they recover their ſight and their plumage, and are then of the ſize of the common wild Duck, and of a black colour, excepting a white ſpot on each of their foreheads. When opened immediately on their emerging from the

ſubterraneous

ſubterraneous lake, their ſtomachs are found to contain numbers of ſmall fiſhes, on which they muſt neceſſarily have ſubſiſted during their continuance in that ſituation.

Duck, Wild. The difference between Wild Ducks ariſes principally from their ſize and the nature of thoſe places from whence they derive their ſubſiſtence. The ſea Duck, which frequents the ſalt water, and often amuſes itſelf with diving, has a broad bill pointing upwards, a large toe behind, and a long blunted tail; but the pond Duck has a ſtraight and narrow bill, a ſmall hind toe, and a ſharp-pointed tail. Decoy-men give the former the appellation of the foreign Duck; but the latter is ſuppoſed to be a native of England.

The ſeveral varieties of Wild Ducks imitate our domeſtic breed in aſſociating together in flocks during the winter, flying in pairs in the ſummer, rearing their young by the water-ſide, and conducting them to their food as ſoon as they are protruded from their ſhells. They uſually build their neſts among heath or ruſhes, at a ſmall diſtance from the water; and generally lay twelve or more eggs before they begin to ſit. But though this is their uſual method of procedure, their dangerous ſituation on the ground ſometimes induces them to ſhift their habitations; and accordingly their inartificial neſts are at times ſeen exalted on the tops of trees: theſe ſtations, however, muſt infallibly be attended with much trouble and difficulty, eſpecially as the bills of Ducks ſeem but ill adapted for conſtructing neſts with ſuch durable materials as are capable of reſiſting the inconſtancy of the weather. The neſts thus elevated are generally compoſed of long graſs mixed with heath and lined with feathers; but, in proportion as the climate becomes colder, they are more artificially conſtructed, and provided with warmer linings.

In the arctic regions, all birds of this genus are at incredible pains in protecting their eggs from the inclemencies of the weather: the gull and the penguin tribes, indeed, ſeem to diſregard the moſt intenſe cold peculiar to thoſe climes; but the Duck forms a hole for herſelf; ſhelters the approach to it; lines it with a layer of graſs and clay, and another of moſs within that; and, laſtly, a warm covering of down or feathers.

As theſe fowls poſſeſs the faculties of flying and ſwimming, they are principally birds of paſſage, and probably perform their journies acroſs the ocean as well on the water as in the air. Thoſe which viſit this country on the approach of winter are ſeldom either ſo fat or well-flavoured as the Ducks which continue with us the whole year; their fleſh is often very lean; and it has generally a fiſhy taſte, which diſagreeable flavour it probably contracts during the journey; the food of theſe birds in the Lapland lakes, from whence they deſcend, being generally of the inſect kind.

As ſoon as they arrive in this iſland, they fly about in ſearch of proper winter reſidences; in the choice of which they ſeem to have two objects in view, namely, plenty of food, and ſecurity from interruption. To this end, they prefer lakes in the vicinities of marſhes and thickets, where inſects are moſt plentiful: a pool, therefore, which has a marſh on one ſide, and a wood on the other, is ſeldom without vaſt quantities of wild fowl; where a few have once fixed their reſidence, numbers are induced to ſettle; and Ducks flying in the air are often allured down from their heights by the loud voice of the mallard from below. Nature ſeems to have endowed this bird with very particular faculties for this purpoſe: the wind-pipe, where it begins to enter the lungs, opens into a kind of bony cavity, from which the ſound is reverberated as in a muſical inſtrument, and heard at a great diſtance: to this call all the ſtragglers reſort; and, in a very ſhort time, a lake which before was altogether deſtitute of ſuch inhabitants, appears covered with water-fowl that have left their Lapland retreats, in order to aſſociate with the natives of this iſland.

Wild Ducks generally prefer thoſe parts of a lake which are moſt inacceſſible to the fowler, where they all appear as if huddled together, and extremely buſy and clamorous. In what ſort of employment they are occupied for whole days together, it is not eaſy to conjecture; where they ſit and cabal thus, it ſeems impoſſible for them to find food, being generally the very centre of the lake; and as to courtſhip, the ſeaſon of love is not then arrived: all of them, however, appear to be loaded with induſtry; nor does a ſingle individual among them ſeem to be one moment at reſt.

They frequently move off privately by night, in order to feed in the adjacent meadows and ditches, which they are afraid to approach by day: during theſe nocturnal adventures, many of them are often captured; for, though naturally timorous, they are eaſily deceived, and caught by means of ſpringes. The greateſt quantities, however, are taken in decoys, which are well known in Lincolnſhire, the great magazine of wild fowl in this kingdom, as well as in Somerſetſhire, and ſome other counties. Theſe decoys are thus prepared and conducted. A proper ſpot is pitched on at a diſtance from any public road, as well as from houſes and noiſe. A decoy is moſt eligible where there is a large pond ſurrounded by a wood, and beyond that a marſhy and uncultivated country. The place being choſen, the water muſt, if poſſible, be ſurrounded with willows, unleſs the woods naturally ſhade it in every direction. On the ſouth and north ſide of the pond, two, three, or four ditches or channels, ſhould be made, broader towards the water, and gradually narrowing till they terminate in a point: theſe channels ſhould be covered over with nets, ſupported by hooped ſticks bending from one ſide to the other, ſo as to form a vault or arch growing narrower and narrower to the point, where it ſhould be terminated by a tunnel net; along the banks of theſe netted channels many hedges ſhould be made of reeds ſlanting to the edges of the gutters, their acute angles being towards the ſide next the pool; and the whole apparatus ſhould alſo be concealed from the pool by a marginal hedge of reeds, behind which the operations of the fowler are conducted.

Matters being thus ſettled, the fowler, who is provided with a number of Ducks termed decoys, which are rendered tame by education, and accuſtomed to attend their maſter on being ſummoned by a whiſtle, ſets them to feed at the mouths of the pipes. No ſooner does the evening commence, than the *decoy riſes*, to uſe the language of fowlers, and the wild fowl feed during the night. Should the evening be ſtill, the noiſe of their wings during their flight is heard at a conſiderable diſtance, and produces no unpleaſing ſenſation. The fowler, whenever a fit opportunity offers, and he ſees his decoy covered with fowl, walks about the pond, and obſerves into what pipe or channel the aſſembled Ducks may be enticed or driven with the greateſt facility: then throwing hempſeed,

or

or ſome ſimilar allurement which will float on the ſurface, at the entrance of the pipe, and along it's extent, he whiſtles to his Decoy-Ducks, which inſtantly obeying the ſummons, approach, in expectation of being fed as uſual; whither alſo they are followed by a whole flock of the wild ones, unſuſpicious of their meditated ruin. However, their ſenſe of ſmelling being extremely acute, they would ſpeedily diſcover the ambuſcade, did not the fowler hold a piece of burning turf to his noſe, againſt which he conſtantly breathes, and thereby prevents the effluvia of his perſon from affecting their very exquiſite ſenſes. The Wild Ducks, therefore, in purſuing the decoy ones, are conducted by them into the broad mouth of the pipe, without the ſmalleſt ſuſpicion of danger, the fowler being ſtill hid behind one of the hedges: nevertheleſs, when they have proceeded a ſhort way up the pipe, and perceive it to grow narrower, they begin to apprehend danger, and endeavour to return; but in this attempt they are prevented by the fowler, who now makes his appearance at the broad end below. Thus ſurprized, intimidated, and utterly unable to riſe becauſe of the ſurrounding net, the only remaining way of eſcape ſeems to be through the narrow-funnelled net at the bottom; into which they fly, and are inſtantly taken.

It frequently happens, however, that the wild fowl will not follow the Decoy-Ducks; and, on ſuch occaſions, a little dog, regularly bred to the buſineſs, is employed in running backwards and forwards between the reed-hedges, in which there are apertures ſuited both to the viſion of the fowler and the paſſage of the animal. This circumſtance attracts the notice of the wild fowl; which, prompted by curioſity, advance towards the dog, who continues playing among the reeds, but ſtill nearer and nearer to the funnel, till he has allured the Ducks too far for receſſion.

It ſometimes alſo comes to paſs, that the dog does not attract the attention of the fowls till a red handkerchief, or ſome other thing very ſingular and ſhewy in itſelf, is tied round him: nor do the Decoy-Ducks ever enter the funnel-net with the reſt, being trained to dive under water as ſoon as their companions are entrapped.

The general ſeaſon for catching wild fowl in decoys is from the latter end of October till February; and, by an act of George II. a penalty of five ſhillings is incurred for every ſuch bird caught at at any other period. Decoys, in Lincolnſhire, are uſually let at a certain annual rent, from five to thirty pounds a year: theſe principally ſupply the London markets with wild fowl; and upwards of thirty thouſand Ducks, widgeon, and teal, are ſaid to have been ſent up, in the courſe of one ſeaſon, from ten decoys in the vicinity of Wainfleet.

To the above account of the method of catching wild fowl in England, it may not be unentertaining to ſubjoin another ſtill more extraordinary one frequently practiſed in China. Whenever the fowler eſpies a number of Ducks ſettled in the water, he puts off two or three gourds from the land, that they may float among them; which being excavated, always ſwim on the ſurface. The fowls, at the firſt, appear to be ſomewhat ſhy in approaching them; but as the moſt terrific objects, when conſtantly preſented to the view, gradually become more and more familiar, ſo the Ducks at length gather round the gourds, and amuſe themſelves with whetting their bills againſt them. The fowler now hollows out one of theſe gourds ſufficiently large for the admiſſion of his head; and, after making perforations in it proper for breathing and ſeeing through, he places it on his head. Thus accoutred, he wades ſlowly into the water, ſuffering nothing but the gourd to be perceived above the ſurface; and in that poſture he moves imperceptibly towards the Ducks, which appear unſuſpicious of the ſmalleſt danger. At laſt, however, getting into the middle of the flock, he ſeizes one of them by the legs, draws it inſtantly under the water, and faſtens it under his girdle; from whence he proceeds to a ſecond, a third, and ſo on, till he has loaded himſelf with as many as he can carry away. When he has thus obtained the deſired quantity, without either diſturbing the reſt of the fowls, or the pool itſelf, he moves ſlowly off again; and in this manner ſometimes viſits the flock thrice in one day.

Duck, Eider; the anas moliſſima of Linnæus. Theſe very profitable Ducks are found in the Hebrides; but more particularly in Norway, Iceland, and Greenland, from whence vaſt quantities of their ſoft feathers, known by the name of Eider down, are annually imported into Great Britain; their remarkably light, elaſtic, and warm qualities, rendering them a highly-eſteemed ſtuffing for coverlets, eſpecially by thoſe whom age or infirmities have too much enfeebled to ſupport the weight of common blankets.

The Eider Duck is double the ſize of the common one. The bill is black; the feathers of the forehead and cheeks, by advancing far into the baſe, form two very acute angles; the forehead is of a deep velvet black colour; from the bill to the hind part of the head, runs a broad black bar, paſſing acroſs the eyes on each ſide; and on the hind part of the neck, juſt beneath the extremity of this bar, there is a broad pea-green mark which has the appearance of a ſtain. The crown of the head, the cheeks, the neck, the back, the ſcapulars, and the coverts of the wings, are white; the inferior part of the breaſt, the belly, the tail, and the quill-feathers, are black; and the legs have a greeniſh caſt. The female is of a reddiſh brown colour barred tranſverſely with black, except on the head and the upper part of the neck, where ſhe is marked with duſky ſtreaks pointing downwards. The primary feathers are black; the laſt or greater row of coverts of the wings, as well as the leſſer row of quill-feathers, are tipped with white; the tail is duſky; and the belly is a deep brown, marked obſcurely with black.

The Eider Duck builds her neſt among the rocks or plants which cover the ſea-ſhore, where ſhe lays from ſix to eight eggs. There is nothing very ſingular in the external materials of her habitation; but the internal lining, on which ſhe depoſits her eggs, is the warmeſt, ſofteſt, as well as lighteſt, that can poſſibly be conceived: this inner covering is no other than the down produced from the breaſt of the bird herſelf in the breeding ſeaſon, which ſhe plucks off with her bill, and thus furniſhes her neſt with a more curious texture than the united art of man is capable of producing.

The natives of theſe gelid regions exert their utmoſt induſtry in diſcovering the neſt of this aquatic fowl; and, after ſuffering her to lay, rob her both of her eggs and materials. Not diſcouraged by this firſt diſappointment, the Duck builds another habitation, in which ſhe depoſits freſh eggs; and this ſecond manſion, together with it's valued furniture, is alſo removed by the inhabitants. She ventures, however, to build a third time; but then

the down with which her neſt is lined is ſupplied from the boſom of the drake: and if this ſhould likewiſe be plundered, the male and female both relinquiſh the place for ever.

The down with which the neſts of theſe fowls are lined is ſeparated from the adhering moſs and duſt by the natives; and though the climate which they inhabit requires extraordinary warm cloathing, their neceſſities oblige them to exchange this commodity with the indolent and luxurious inhabitants of the ſouth for brandy and tobacco.

Duck, Velvet; the anas fuſca of Linnæus. The male of this ſpecies is larger than the common Duck. The bill is broad and ſhort, yellow on the ſides, and black in the middle; and the hook is red. The head and part of the neck are black tinged with green; behind each ear there is a white ſpot, and in each wing a white feather. The reſt of the plumage is a fine black, and of the ſoft and delicate appearance of velvet; the legs and feet are red; and the webs are black. The female is entirely of a deep brown colour, the marks behind each ear and on the tail excepted; and the bill is deſtitute of the protuberance at the baſe which Linnæus makes the characteriſtic of the male. This Duck is common to the coaſts of Norway; but ſeldom makes it's appearance in Great Britain except in very ſevere winters.

Duck, Scoter; the anas nigra of Linnæus. This ſpecies weighs about two pounds and nine ounces; it's length is twenty-two inches; and the expanſion of it's wings is thirty-four inches. The middle of the bill is of a fine yellow colour, but the reſt of it is black. Both the male and female are deſtitute of the hook at the extremity; but on the baſe of the bill of the former there is a large knob, divided by a fiſſure in the middle. The tail conſiſts of ſixteen ſharp-pointed feathers, the middlemoſt of which are the longeſt. The whole plumage is black, except that of the head and neck, which is gloſſed over with purple; and the legs are black.

This bird, the macreuſe of the French, is allowed by the Romiſh church to be fed on during Lent; but for what particular reaſon it enjoys this diſtinguiſhed honour, perhaps all the doctors of the Sorbonne are at a loſs to determine. It lives almoſt conſtantly at ſea, is a great diver, and is taken in nets placed under the water.

Duck, Tufted; the anas fuligula of Linnæus. This ſpecies does not weigh more than two pounds; and it's length is about fifteen inches and a half. The bill is of a blueiſh grey colour, except the hook, which is black; the head is adorned with a ſhort, thick, pendent creſt; the belly and under-coverts of the wings are pure white; but the reſt of the plumage is black, varied about the head with purple. The tail, which conſiſts of fourteen feathers, is ſhort; the legs are a blueiſh grey; and the webs are black. The female has no creſt. When young, ſhe is of a deep brown colour; and the ſides of her head next the bill are a pale yellow; but, in other reſpects, ſhe exactly reſembles the Duck in maturity.

Duck, Scaup; the anas marila of Linnæus. This bird is ſmaller than the common Duck. The bill is broad, flat, and of a greeniſh blue colour; the head and neck are black gloſſed with green; the breaſt is black; the back, the coverts of the wings, and the ſcapulars, are beautifully marked with numerous narrow tranſverſe black and grey bars; the greater quill-feathers are duſky, the leſſer being white tipped with black. The belly is white; the tail and feathers, both above and below, are black; the thighs are barred with duſky and white ſtrokes; and the legs are duſky. Willughby ſuppoſes that theſe Ducks derive their name from feeding on Scaup, or broken ſhell-fiſh. Their colours are ſo exceedingly various, that, in a large flock, hardly two of them are to be found alike.

Duck, Golden-Eye; the anas clangula of Linnæus. The length of this ſpecies is nineteen inches, and the breadth thirty-one; the weight being about two pounds. The bill is black, ſhort, and broad at the baſe; the head is large, and of a deep black hue gloſſed with green; and at each angle of the mouth there is a large white ſpot. The irides are a bright yellow; the ſuperior part of the neck is of the ſame colour with that of the head; the breaſt and belly are white; and the ſcapulars are black and white. The tail, the back, and the coverts on the ridges of the wings, are black; the firſt fourteen quill-feathers, and the four laſt, are black; the ſeven middlemoſt are white, as well as the coverts immediately above them; and the legs are orange-coloured. The head of the female is a deep brown tinged with red; the neck is grey; the breaſt and belly are white; the coverts and ſcapulars are duſky and cinereous; the middle quill-feathers are white; the remainder, together with the tail, are black; and the legs are duſky.

Theſe Ducks, which frequent both ſalt and freſh waters, are, during the winter ſeaſon, frequently caught in the Shropſhire meres.

Duck, Burrough, or Shieldrake; the anas tadorna of Linnæus. The male of this elegant ſpecies meaſures two feet in length; the expanſion of the wings is three feet and a half; and the weight is two pounds and a half. The bill is of a bright red colour, ſwelling at the baſe into a knob, which appears moſt conſpicuous in the ſpring; the head and upper part of the neck are a fine blackiſh green; the lower part of the neck is white; and the breaſt and ſuperior part of the back are ſurrounded with a broad band of bright orange bay. The coverts of the wings and the middle of the back are white; the neareſt ſcapulars are black, the others being white; the greater quill-feathers are black, the exterior webs of the next being a vivid green, and thoſe of the three ſucceeding an orange. The coverts of the tail, as well as the tail itſelf, are white, except that the two outermoſt feathers of the latter are tipped with black. The belly is white, and longitudinally divided by a black line; and the legs are of a pale fleſh-colour.

Theſe fowls, which frequent the ſea-coaſts, breed in rabbit-holes, after having diſpoſſeſſed the inhabitants. When any attempt is made to ſeize their young, the old Ducks ſhew great addreſs in diverting the attention of the fowler from his purpoſe: they ſkim along the ground as if in a wounded condition, till ſuch time as their brood have got into places of ſecurity; after which they return and collect them together. This inſtinctive cunning furniſhed Turner with a plauſible reaſon for conjecturing that the Shieldrake is the chenalopex or fox-gooſe of antiquity; and it is certain that the natives of the Orkneys give this ſpecies the appellation of the fly-gooſe, from an attribute of that quadruped.

Theſe fowls, which lay fifteen or ſixteen whitiſh eggs of a rounded ſhape, aſſociate together in large flocks during the winter ſeaſon. Their fleſh is extremely rank and diſagreeable.

Duck, Pintail; the anas acuta of Linnæus. The neck of this ſlender bird is long; it's length is twenty-eight inches, it's breadth about three feet two inches, and it's weight a pound and a half. The bill is black in the middle, but blue on the ſides; the head is of an iron colour, tinged behind the ears with purple; a white line, bounded with black, extends from the ears a conſiderable way down the neck; the hind-part of the neck, the back, and the ſides, are elegantly marked with white and duſky waved lines; and the fore-part of the neck and the belly are white. The ſcapulars are ſtriped with black and white; the coverts of the wings are cinereous; the middle quill-feathers are marked on their exterior webs with green, black, and white bars; the outer feathers of the tail are aſh-coloured, the two middlemoſt, being black, and three inches longer than the reſt; and the feet are of a leaden hue. The female is of a light brown colour ſpotted with black.

Theſe Pintail Ducks are found in great abundance in the county of Connaught, in Ireland, during the month of February; and they are highly eſteemed for the delicacy of their fleſh.

Duck, Long-Tailed; the anas glacialis of Linnæus. The bill of this ſpecies, which is of a moderate ſize, is ſhort, black at the tip and baſe, and orange-coloured in the middle. The cheeks are of a pale brown hue; the hind-part of the head, and the neck both before and behind, are white; the ſides of the ſuperior part of the neck are marked with large duſky bars pointing downwards; the breaſt and back are a deep chocolate; and the ſcapulars are white, long, narrow, and ſharp-pointed. The coverts of the wings and the greater quill-feathers are duſky; the leſſer are a reddiſh brown; and the belly is white. The four middle feathers of the tail are black; but two of them, which are nearly four inches longer than the reſt, are white; and the legs are duſky.

Theſe Long-Tailed Ducks, which breed in the moſt northern climates, viſit Great Britain only in ſuch winters as are uncommonly ſevere.

Duck, Pochard; the anas ferina of Linnæus. The length of this bird is about nineteen inches, it's breadth two feet and a half, and it's weight twenty-eight ounces. The bill is of a deep lead colour; the head and neck are a bright bay; and the breaſt, and part of the back where it joins the neck, are black. The coverts of the wings, the ſcapulars, the back, and ſides under the wings, are a pale grey elegantly marked with narrow black lines; the quill-feathers are duſky; the belly is cinereous and brown; and the tail, which conſiſts of twelve ſhort feathers, is a deep grey. The legs are of a leaden hue; and the irides are a bright yellow tinged with red. The head of the female is of a pale reddiſh brown colour; the breaſt is ſomewhat deeper; and the belly, together with the coverts of the wings, are a pale cinereous.

Theſe Ducks, which ſhew an equal partiality to freſh and ſalt water, are eſteemed very delicate food: they are often expoſed to ſale in the London markets, where they are known by the appellation of the Dun-birds.

Duck, Ferruginous; the anas ruſa of Linnæus. This fowl, which is ſcarcely mentioned by any other naturaliſt except the above celebrated one, weighs about twenty ounces. The bill is long and depreſſed, rounded a little at the baſe, ſerrated along the edges of each mandible, and furniſhed with a nail at the end of the ſuperior. The general colour is a pale blue; the head, neck, and entire upper part of the bird, is an agreeable reddiſh brown; the throat, breaſt, and belly, are of the ſame colour, but ſomewhat paler; the legs are a pale blue; and the webs of the feet are black.

Bolton informs us, that a bird of this ſpecies was killed in Lincolnſhire; and Linnæus ſays, that the Ferruginous Duck is ſometimes, though rarely, found in the Swediſh rivers.

Duck, Gadwall, or Gray; the anas ſtrepera of Linnæus. This ſpecies is about the ſize of the widgeon. The bill is flat, and of a black colour; the head, and the upper part of the neck, are a reddiſh brown ſpotted with black; the lower part, the breaſt, the upper part of the back, and the ſcapulars, are beautifully marked with black and white lines; the belly is a duſky white; and the rump, both above and below, is black. The tail is cinereous edged with white; the coverts on the ridges of the wings are a pale reddiſh brown, thoſe beneath being a purpliſh red, and the loweſt a deep black. The greater quill-feathers are duſky; the inner webs of three of the leſſer quill-feathers are white, forming a very conſpicuous ſpot; and the legs are orange-coloured. The breaſt of the female is a reddiſh brown ſpotted with black, the back being of the ſame colour; and though ſhe retains the ſame ſpots on her wings, they are far more faint than thoſe of the male.

Duck, Garganey; the anas querquedula of Linnæus. The length of this ſpecies is ſeventeen inches, and the expanſion of the wings twenty-eight. The bill is of a deep lead colour; the crown of the head is duſky, marked with oblong ſtreaks; and from the corner of each eye iſſues a long white line pointing upwards to the back of the neck. The cheeks, and the upper part of the neck, are a pale purple, marked with minute oblong lines of white pointing downwards; the breaſt is a light brown impreſſed with ſemicircular black bars; the belly is white; the lower part, together with the vent, are varied with ſpecks; and the bars are duſky. The coverts of the wings are grey; the firſt quill-feathers are cinereous; the exterior webs of thoſe in the middle are green; the ſcapulars are long, narrow, and elegantly ſtriped with white, aſh-colour, and black; the tail is duſky; and the legs are lead-coloured. The female has an obſcure white mark over her eyes; but the reſt of her plumage is a browniſh aſh-colour.

Duck, Broad-Beaked; the anas clypeata, or latiroſtra, a ſpecies of marine Duck known in England by the name of the ſhoveller. This fowl is ſomewhat ſmaller than the common Duck. The beak is remarkably broad, particularly at the end, where it is rounded and hollowed like a ſhield; and the edges of each mandible are pectinated, or ſupplied with thin laminæ, which lock into each other when the mouth is cloſed. The irides are of a bright yellow colour; the head, and the upper part of the neck, are a blackiſh green; the lower part of the neck, the breaſt, and the ſcapulars, are white; and the back is brown. The coverts of the wings are a fine ſky blue, thoſe next the quill-feathers being tipped with white; the greater quill-feathers are duſky; and the exterior webs of the middlemoſt are a gloſſy green. The tail is ſhort, and variegated with black and white; the belly is of a bay colour; the vent-feathers are black; and the legs and feet are red. The female has the ſame marks in her wings as the male, though the colours are leſs vivid; and the reſt of her plumage reſembles that of the common wild Duck.

Duck, Morillon; the anas glaucion of Linnæus.

næus. This bird, which appears to be the morillon of Belonius, has a yellowiſh brown bill, golden-coloured irides, and a duſky, ruſt-coloured head. Round the upper part of the neck there is a collar of white, and beneath it another of grey. The back and the coverts are duſky, excepting a few white lines; the great coverts are alſo duſky, with ſome large white ſpots; the primaries are black; and the ſecondaries are white. The breaſt and belly are white; the tail is duſky; the ſides above the thighs are black; and the legs are yellow.

Duck, Grey-Headed, of Edwards; the anas ſpectabilis of Linnæus. This ſpecies has a red-coloured bill, which extends into the forehead on each ſide, in the form of a broad, flatttiſh bean. The feathers at the root of the upper mandible are black, and run into the baſe of the bill with three angles; the eyes are ſurrounded with black feathers, which terminate in a point backwards; the top, and hind-part of the head, are of a light blueiſh aſh-colour; the ſides of the head beneath the eyes are a light green; and a line of black ſpots runs from the eyes down the ſides of the head, and divides the aſh-colour from the green. The neck and breaſt are white; the back is a dark brown, or black, with a purpliſh gloſs; the greater quills of the wings and the tail are a dark brown; the tips of the middle quills form a white bar acroſs the wings; the leſſer covert-feathers of the wings are brown, but in the middle of the coverts in each wing, there is a plat of white. The breaſt gradually loſes it's whiteneſs in the belly, which is wholly black; the covert-feathers of the tail, both above and beneath, are a bright ſhining black; on each ſide of the tail there is a large round white ſpot; and the legs and feet are a dirty red. This bird is a native of Hudſon's Bay.

Duck, Little Brown and White; the anas minuta of Linnæus. This Duck is about the ſize of the teal, and reſembles it pretty much with reſpect to ſhape. The bill is black, ſerrated on the edges, and a little hooked at the point of the upper chap; the feathers round the baſe, on the upper part, are white; and the bill itſelf has two angles, which point towards the forehead on each ſide. A line of duſky white feathers runs between the bill and the eye, and divides the white into ſpots both above and below the line; a white ſpot alſo appears behind each eye; but the remainder of the head, the neck, and the beginning of the breaſt, are brown. The back, wings, and tail, are a darkiſh brown, but the covert-feathers of the wings are brighteſt. The breaſt, from being brown, gradually becomes white tranſverſely mottled with light brown as far as the thighs; the thighs and lower belly are a lighter and darker brown tranſverſely mixed in broken lines; and the legs and feet are duſky, with a reddiſh caſt before. This fowl, which was firſt deſcribed by Edwards, is alſo a native of Hudſon's Bay.

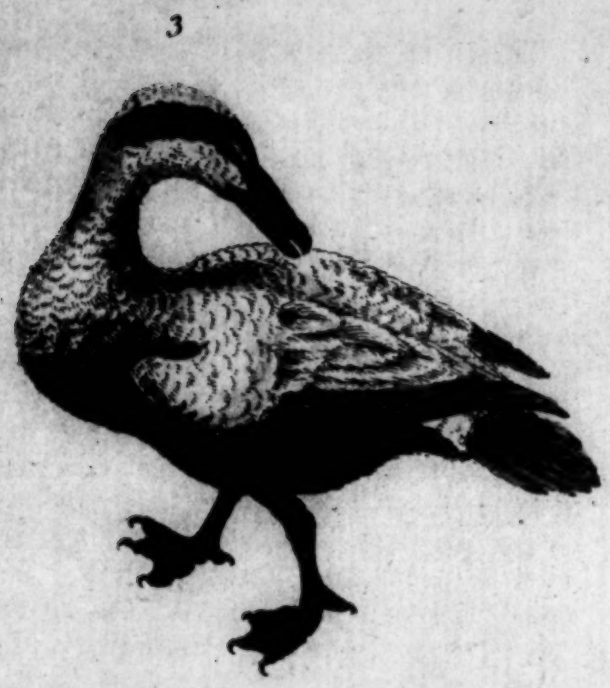
Duck, Whistling, of Jamaica; the anas arborea of Linnæus. This ſpecies is nearly two feet in length from the tip of the bill to the extremity of the tail. It makes a kind of whiſtling noiſe on every occaſion; but, what is moſt extraordinary in birds of this genus, it builds it's neſt in trees. The bill, which reſembles that of the common Duck, is pectinated at the edges, hooked at the point, and of a duſky colour. The ſides of the head are brown; but on the top, which is black, the feathers are very long, and point backwards in the ſhape of a creſt. The hinder part of the neck is duſky; but the under ſides of the head, neck, and throat, are white. The neck is variegated with ſmall black ſpots; and the back and upper ſides of the wings are brown. The greater quill-feathers are a dark brown; the coverts of the wings have black ſpots in their middles; the tail, the rump, and the ſuperior coverts of the tail, are black; the breaſt is a bright reddiſh brown, ſpotted with black; and the belly is white, with an admixture of black on the ſides and a ſhort way down the middle. The legs are longer than is uſual in fowls of the Duck kind, and entirely bare a little above the knee. The three foremoſt toes are web-bed; and there is likewiſe a lateral web on the ſide of the inner toe. The legs and feet are covered with lead-coloured ſcales; and the back toe is placed ſo very high as ſcarcely to touch the ground. This Duck is very common in Jamaica.

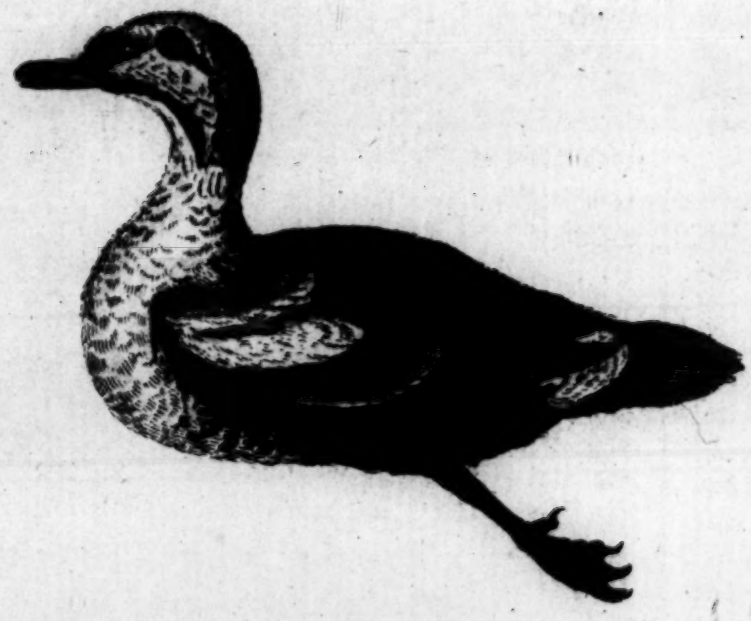
Duck, Whistling, Red-Billed; the anas autumnalis of Linnæus. This fowl is ſomewhat ſmaller than the common Duck, and the neck and legs are longer in proportion: the bill is alſo ſhaped like that of the common Duck, of an agreeable red colour, yelloviſh about the noſtrils, and black at the point; the irides are a dark hazel; and the ſides of the head round the eyes, and on the throat, are a light cinereous. The crown and hinder part of the head are blackiſh; and the neck, breaſt, and back, are of a brick colour. The greater quills of the wings are black, as well as thoſe of the baſtard wings which cover their bottoms; the inner quills which fall on the rump are a dark brick; and the firſt and ſecond rows of coverts next above the quills are white. Immediately above the white there is a bright orange plat; the ſmall feathers on the ridges and joints of the wings, as well as the whole belly, tail, and thighs, are black; the rump and the coverts on the upper ſide of the tail are alſo black; and the legs and feet are of a fleſhy hue, with black claws. This ſpecies is a native of the Weſt Indies.

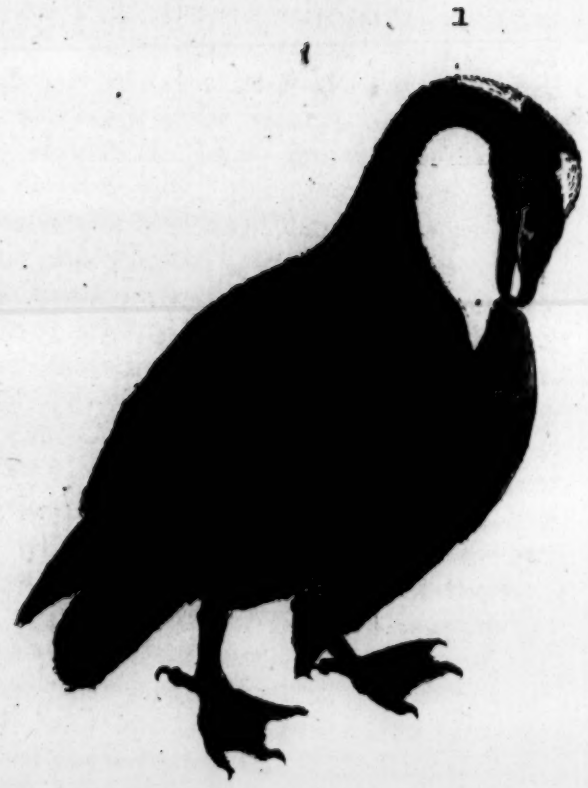
Duck, White-Bellied, of Jamaica. This ſpecies is about twenty inches long from the tip of the bill to the extremity of the tail; and the expanſion of the wings is about thirty inches. The bill is black, and nearly two inches in length; and the tail is three inches. The feathers on the head are mottled with light and dark brown; and the upper part of the neck, the ſides under the wings, and part of the belly, are covered with brown feathers croſſed with whitiſh lines. The back is ſomewhat more duſky than the reſt of the body; the tail and wings are a light brown; but ſome of the ſhorter prime-feathers are painted with green, orange, and white. The breaſt, and part of the belly, are white; and the legs and feet are a greeniſh brown.

Duck, Barbary, or Guinea Duck. This bird is larger than the common Duck, but ſmaller than the gooſe; and the male is larger than the female. The bill is ſhort, broad, and crooked at the end; there is a creſt, or red tubercle, between the eyes, as large as a cherry; and a ſkin ſurrounds them which has the appearance of red leather. The fleſh has the flavour both of the gooſe and the Duck. The colour of theſe fowls frequently varies; ſome being white, others black, and ſome of different hues: they are, however, generally black, variegated with other tints.

Duck, Great Black; the anas perſpicillata of Linnæus. This bird, which is a native of Hudſon's Bay, is conſiderably larger than the common Duck. The bill is horizontally compreſſed towards







1. GREAT BLACK DUCK. 2. GREY-HEADED DUCK. 3. EIDER DUCK. 4. FERRUGINOUS DUCK.

5. LITTLE BLACK AND WHITE DUCK. 6. LITTLE BROWN AND WHITE DUCK.

Plate XXXIX. Published as the Act directs, by Harrison & Co. July 16. 1785.

wards the point, indented on the edges, and of a pale orange colour, except in the middle, where it is reddiſh. In the broad part of the upper mandible next the head, on each ſide, there is a large ſquare black ſpot, which projects a little from the bill; a white triangular mark extends from eye to eye on the crown of the head; and on the hinder part of the neck, immediately below the head, there is another longiſh triangular white ſpot; excepting which marks, the whole plumage is black, without any reflecting gloſs. The inſides of the wings, and the under-ſide of the tail, are leſs dark than the reſt; the legs and toes are a bright red; the three forward toes are webbed together, the inner and hinder ones being furniſhed with fins; and the webs of the toes and claws are duſky.

Duck, Black-Crested. This ſpecies weighs about two pounds; it's length is ſixteen inches, and it's breadth two feet three inches. The bill is broad, two inches long, and entirely of a blue colour, except the tip, which is black. The noſtrils are large, the ſpace ſurrounding them being quite bare; the irides are of a golden colour; the ears are ſmall; and the top of the head is a blackiſh purple. A black creſt, about an inch and a half long, depends from the head; the neck, and the ſuperior part of the body, are a deep blackiſh brown; the wings are ſhort and black, except the four firſt feathers, which are browniſh, and the ſucceeding ten, which are of a ſnowy whiteneſs. The tail, which is very ſhort, is compoſed of fourteen black feathers; the lower part of the breaſt, as well as the belly, is white; the feet are a dark blue; and the toes, which are long, have dark membranes between them.

Duck, Dusky and Spotted; the anas hiſtrionica of Linnæus. This ſpecies is about the ſize of the common mallard. The bill is duſky, indented on the edges, and ſomewhat hooked at the extremity of the upper mandible. The ſides of the head between the bill and the eyes are white; and a line of the ſame colour extends over the eyes, gradually changing into a reddiſh orange-colour, and reaching to the hind part of the head. A white ſpot occupies the place of each ear; and a line of the ſame colour paſſes from the hind part of the head, on each ſide, down the neck. The crown of the head is black, it's ſides behind the eyes being a purpliſh blue; and the whole neck, both behind and before, is black. Between the bottom of the neck and the breaſt there is a white circle continued almoſt round, the feathers bordering on it, both above and beneath, being a deep black; and between this collar and the wings on each ſide there is a longiſh plat of white feathers bordered round with black tranſverſely placed. The back, towards the neck, is a dark purpliſh blue, and in the middle a dark dirty brown. The rump and the covert-feathers of the tail are a deep black with a blue gloſs; the greater quills of the wings and the tail-feathers are a dull blackiſh brown; the exterior webs of the middle quills are a fine ſhining blueiſh purple, the coverts immediately above them being of the ſame colour with white tips; the inner quills next the back, as well as the feathers which ſpring from the ſhoulders, are a blueiſh aſh-colour on the borders of their webs, and white in their middles; the leſſer coverts of the wings are cinereous, with a white ſpot in their middles on each wing; the ridges of the wings above the joints is a reddiſh brown; and the inſides of the wings are a duſky brown. The breaſt, below the circle, is a blueiſh aſh-colour; the belly and thighs are a dull brown inclining to black; the feathers on the ſides are a dull orange; and on each ſide of the tail, where the upper and under covert-feathers meet, there is a white ſpot. The legs, feet, and claws, are a blueiſh black; and the toes are webbed and finned.

This bird was brought from Newfoundland; and is deſcribed by the ingenious Edwards with his uſual accuracy.

Duck, Little Black and White; the anas albeola of Linnæus. This bird is ſomewhat ſmaller than the common Duck. The bill is ſhort, and of a dirty black colour; the head is a deep gloſſy black, except a large white ſpot, which begins behind the eyes on each ſide, and unites on the hind part of the head. The black feathers next the bill poſſeſs a fine green luſtre, thoſe on the crown and the beginning of the neck being more of a purple hue; the neck, a little below the head, is entirely white; and the lower part of it behind, together with the back, are a dull black. The rump and the covert-feathers of the tail are a dirty white; the middle feathers of the tail, which are by far the longeſt, are all of a dirty brown or blackiſh hue on their upper ſides, but ſomewhat fainter beneath. The exterior quills of the wings are black; the middlemoſt have deep white tips; a few of the inner ones next the back are black; and the firſt row of covert-feathers is black where they fall on the greater or black quills, and white where they cover the white quills. The leſſer coverts are white, with an admixture of black round their ridges; from each ſhoulder iſſues a plat of white feathers, falling backwards in points between the back and the wings; the neck, the whole under-ſide of the tail, and the interior covert-feathers of the wings, are white; the legs and feet are a yellow orange; and the claws are black.

This Duck is a native of Newfoundland, where the ſeamen call it a Spirit, probably from the amazing celerity with which it dives, and again appears at a conſiderable diſtance from the place of it's immerſion.

Duck, Stellated. This ſpecies is diſtinguiſhed by it's eyes, which are placed higher than uſual in an oval black ſpot; but it's principal characteriſtic is a large white ſtar on it's back. The head under the eyes is brown; the bill is black near the baſe; and the reſt of the body is duſky.

Duck, Madagascar. This bird is larger than the tame Duck. The bill is of a yellowiſh brown colour; the irides are a fine red; the neck and head are a duſky green; and the back is a deep purple mixed with blue. The edges of the feathers are red; the breaſt is a deep brown, the edges of it's exterior feathers being red; and thoſe on the ſhoulders are green, except a few whoſe margins are red. The firſt row of the covert-feathers is of the ſame colour, the ſecond being green. The long feathers of the wings are beautified with red edges; and the legs and feet are of an orange hue.

Duck, Hook-Billed; the anas adunca, roſtro incurvato, of naturaliſts. This ſpecies bears a ſtrong ſimilitude to the common wild Duck; but it differs from it in the conformation of the bill, which is broad at the tip, ſomewhat longer than that of the common Duck, and bends a little downwards: the head is alſo ſmaller, as well as more ſlender. It generally weighs about two pounds; it meaſures two feet in length from the tip of the bill to the extremity of the tail; and the

expanſion of the wings is three feet. The upper part of the head and neck are of a dark green colour; having two ſmall white ſpeckled lines, one of which runs from the upper part of the bill over the eye towards the back part of the head, and the other from the bill towards the lower part of the eye, around which there is a circle of beautiful white feathers. The breaſt, belly, and throat, are white, with ſmall tranſverſe reddiſh brown ſpots interſecting them. The firſt ſix prime-feathers of the wings are white; the reſt being a reddiſh brown; the firſt row of the covert-feathers is blue tipped with white, and the ſecond brown with white tips; the ſcapular feathers of the wings, the ſides, and the back, are a reddiſh brown powdered with white ſpecks; the tail is black, with white tips to the feathers, ſome of which curl upwards as in the common drake; and the legs and feet are a fine orange.

DUCK, MUSCOVY; the anas moſchata of naturaliſts. This fowl, which is the largeſt of all the Duck kind, is termed the Muſcovy Duck, not on account of it's being a native of Muſcovy, but from it's ſtrong muſky odour. The general colour, both of the male and female, is a purpliſh black variegated with white: the female, however, is ſometimes wholly white. It's beak and feet are red; it has red fleſhy protuberances about it's bill and eyes; it's voice is ſo very hoarſe as to be ſcarcely audible except when the bird is incenſed; and it's eggs are remarkably round.

DUCK, BAHAMA. This fowl is ſmaller than the tame Duck: The head, near the upper jaw, is of a triangular ſhape and gold colour; the inſide of the bill and the lower part of the neck are white; the hind part of the head, the breaſt, and the belly, are a yellowiſh aſh; the wings are brown, but the middle is green ſurrounded with yellow; and the extremities are black.

DUCK, SUMMER, OF CAROLINA, the anas ſponſa of Linnæus. The bill of this bird is red in the middle, and there is a black ſpot at the extremity. The irides are yellow, with a purple circle; and on each ſide of the head there are two long feathers apparently divided into hairs of a blueiſh green colour with a purpliſh caſt and a narrow white border. The feathers on the head are of a violet hue; from each ſide of the throat, which is white, run ſeveral bow-like ſtreaks; and the breaſt is red ſpotted with white. Near the ſmall coverts of the wings there are broad black ſtreaks which run acroſs the back; but the upper parts of the wings diſplay a diverſity of colours. The tail is blue and purple; and the feet, which are brown, have a reddiſh caſt on their fore-parts.

DUCK, TREE, OF LOUISIANA. This ſpecies is ſo denominated from it's perching on the boughs of trees. The plumage is ſo very beautiful and variable, as ſcarcely to be imitable by the moſt ſkilful painter; the head is adorned with a fine tuft of remarkably vivid colours; and the eyes poſſeſs a fiery redneſs. The feathers of this bird compoſe ſome of the moſt valued ornaments of the natives.

DUCK, AMERICAN, OF LOUISIANA. The feathers of this Duck are almoſt entirely white; and the ſides of the head are covered with fleſhy excreſcences more red than thoſe of the turkey-cock. The fleſh of this bird, while young, is excellent and well taſted; but, when old, it poſſeſſes a muſky flavour.

DUCKER, or LOON, RED-THROATED. This fowl is about the ſize of the tame Duck. The bill is about three inches and a quarter in length, ſtraight, narrow, ſharp-pointed, and black; the head and ſides of the neck are blueiſh aſh-coloured; and the hind part of the neck is white, ſtreaked with longitudinal black marks. The throat is red; the back, the upper parts of the wings, and the tail, are darkly cinereous; the quill-feathers of the wings are almoſt black, except ſome of the middle ones, which are tipped with white; the coverts of the wings have white daſhes on each ſide of their ſhafts near their tips; the interior covert-feathers of the wings are white; the breaſt, the belly, and the ſides under the wings, are white; the ſides of the breaſt are diſtinctly ſpotted with longitudinal black lines; and the coverts beneath the tail are white marked with broad confuſed duſky ſpots. The legs and feet are duſky, or blackiſh; the toes are ſomewhat reddiſh, and webbed together, as in the Duck kind; the claws are broad and flat like human nails; and the legs, which are placed near the extremity of the body, are very flat.

This bird is a native of Greenland: but, during very ſevere ſeaſons, it viſits more ſouthern climes; and has ſometimes, though rarely, been caught in England.

DUCK'S FOOT. A ſpecies of bivalve ſhell of the family of the eſcallop. It is ſometimes called the coral.

DUN-BIRD. See DUCK, POCHARD.

DUN DIVER, or SPARLING FOWL. This appellation is generally given to the female of the gooſander. The head and upper part of the neck are iron-coloured; the throat is white; the feathers on the hind part, which are long, form a pendent creſt; the back, the coverts of the wings, and the tail, are deeply cinereous; the greater quill-feathers are black, the leſſer being white; and the breaſt and belly are white tinged with yellow. The wings of both male and female are very ſhort in proportion to the ſize of their bodies; nevertheleſs, they fly very ſwiftly along the ſurface of the water. See GOOSANDER.

DUNG-FISH. This fiſh is broad and flat, about a ſpan long, and the ſame in breadth. The body is variegated with duſky ſpots; the belly is blueiſh; the foremoſt rays of the back-fin are ſpiny, the poſterior ones being ſoft. The Dung-Fiſh is ſo termed on account of it's delighting in the vicinities of privies, where it ſearches for it's food, and is uſually taken.

DUNG-HUNTER. This bird, which frequents the arctic regions, is called by Marten the ſtruntgager. The bill is blunt at the fore part, thick, and ſomewhat hooked; the legs are of a moderate length; and the claws, which are three, are united by a black ſkin or membrane. The tail, which expands itſelf after the manner of a fan, has one feather that projects farther than the reſt, whereby this may be diſtinguiſhed from all other birds. The eyes, together with the top of the head, are black; and round the neck there is a dark yellowiſh ring or circle: the wings and the back are brown; and the belly is white. This creature grows to the ſize of the common mew, and generally builds it's neſt in an elevated ſituation. It purſues a certain bird, named kutgegehef, without intermiſſion, till the fugitive voids it's ordure; on which, as well as the fat of whales, the Dung-Hunter feeds. The fleſh is rank and diſagreeable.

DUNG-WORMS. A ſpecies of fly-worms, having ſhort flat bodies, commonly found among cow-dung during the months of September and October.

October. Their metamorphoſis into the fly-ſtate is performed within ſhells compoſed of their own ſkins. The fly produced from the worm, which falls under Reaumur's firſt claſs of two-winged flies, has a trunk and lips, but no teeth; and it's body is compoſed of ſix rings. The head, which is extremely round, and nearly of a ſpherical figure, is very large in proportion to the body; the antennæ are of the lenticular or battledore ſhape; the reticular eyes are of a deep cheſnut-colour; and the three ſmall ones are placed as is uſual in inſects of the ſame claſs. The corſelet is a fine gilded green; and the back is compoſed of ſuch a variety of changeable colours, that no deſcription of them is capable of conveying an adequate idea of their beauty. The under part or belly is a pale yellow; and the legs and balancers are of the ſame hue, but rather more faint.

DUNLIN. The Engliſh name of a bird of the ſnipe kind, the tringa alpina of Linnæus. The back, head, and upper-part of the neck, are ferruginous marked with large black ſpots; the lower part of the neck is white impreſſed with broad duſky ſpots, or with a black creſcent pointing towards the thighs; the tail is cinereous, the two middle feathers being the darkeſt; the legs are black; and the tail is divided to it's origin.

The Dunlin, which is rather larger than the lark, is ſometimes ſeen on the ſea-coaſts of the Britiſh iſles, but may be reckoned among the rara aves. It lays four eggs of a dirty white colour, blotched with brown round their thickeſt ends, and marked with a few ſmall ſpots of the ſame colour on their ſmaller extremities; and it's fleſh is eſteemed a peculiar delicacy.

DUNTER-GOOSE. An appellation ſometimes given to the eider-duck, the anas moliſſima of Linnæus; a fowl very common in the Hebrides.

DYTISCUS. A term by which ſome naturaliſts diſtinguiſh a particular ſpecies of the water-beetle.

E.

EAGLE. A ſpecies of falcon in the Linnæan ſyſtem of zoology; being the largeſt, ſtrongeſt, as well as ſwifteſt, of all predaceous birds.

Eagles generally fix their retreats in ſuch ſituations as are moſt remote from mortals; on whoſe poſſeſſions they rarely commit any depredations, chuſing rather to prey on the wild game of the foreſt than to gratify their appetites at the hazard of their ſafety.

The Eagle is among birds what the lion is among quadrupeds; and, in many reſpects, they ſtrongly reſemble each other: they both exerciſe a kind of ſovereignty over their fellows of the foreſt; and, equally magnanimous, diſdain all petty plunder, and purſue only ſuch animals as are worthy of conqueſt. The Eagle ſcorns to ſhare the ſpoils of another bird, and accordingly rejects every ſpecies of prey which he has not acquired by his own induſtry and proweſs. However craving his appetite may be, he never ſtoops to feed on carrion; nor, when ſatiated, does he ever return to the ſame carcaſe, but leaves it to other creatures more rapacious and leſs delicate than himſelf. Like the lion, alſo, he is ſolitary in his diſpoſition; and it is as extraordinary for two pair of Eagles to be found on the ſame mountain, as for two lions to be obſerved in the vicinity of each other: they live aſunder for the purpoſe of obtaining a more ample ſupply of food, and conſider the quantity of their game as the ſureſt teſt of their dominion.

The lion and the Eagle ſtrongly reſemble each other in other reſpects: their eyes are ſparkling, and nearly of the ſame colour; their claws are ſhaped alike; and their voices are loud and tremendous. Adapted to a ſtate of warfare, they are inimical to all ſociety; and equally fierce, proud, and incapable of being reclaimed.

Infinite art and patience are requiſite in taming the Eagle; and, even when taken young, and humbled by long aſſiduity, it proves but a dangerous domeſtic, and rarely ſhews much regard for it's feeder. When the falconer introduces this creature into the field for the purpoſes of fowling, he is never ſure of it's attachment: innate pride and love of liberty prompt it to regain it's native ſolitudes; and frequently, on being firſt turned looſe, it riſes perpendicularly into the clouds, and is ſeen no more. Sometimes, however, it's natural ferocity has been ſo far ſubdued, that it has evinced no ſmall degree of love for it's maſter: and on ſuch occaſions it proves highly ſerviceable to him, in amply providing both for his pleaſure and ſupport; for, when liberated, it hovers round him in a ſportive manner, till the game preſents itſelf; which the Eagle being capable of diſcerning at an aſtoniſhing diſtance, inſtantly purſues and overtakes.

The Eagle ſoars the higheſt of all the feathered tribe; and hence the ancients have given it the epithet of the Bird of Heaven: of all others alſo it has the moſt perſpicacious eye; but it's ſenſe of ſmelling is much inferior to that of the vulture. It never purſues but when it's prey is in ſight; which, whenever it has ſeized, it places on the ground, previous to carrying it off. Though very powerful when on the wing, the joints of it's legs being rather ſtiff, it finds ſome difficulty in riſing again after a deſcent: however, if not inſtantly purſued, it will with facility carry off a gooſe, or any other bird equally large. It alſo ſeizes on hares, lambs, and kids; which laſt, as well as fawns, it frequently deſtroys for the ſake of drinking their blood, and carrying away ſome part of their fleſh to it's retreat. Even infants, when left unattended, have at times fallen victims to this rapacious creature; which circumſtance probably gave riſe to the fable of Ganymede's having been ſnatched up to heaven by an Eagle. Sibbald, in his Hiſtory of Scotland, records an inſtance of two children that were carried

ried off by Eagles: but providentially they ſuſtained no material injury; for the creatures, when purſued, depoſited the babes in their neſts, from whence they were recovered.

Thus Eagles prove at all times very formidable neighbours; but more particularly ſo when nouriſhing their young; for on ſuch occaſions both the male and female exert all their force and induſtry to ſupply the wants of their progeny. Smith, in his Hiſtory of Kerry, informs us, that a certain peaſant in that county procured a comfortable ſubſiſtence for himſelf and family, during a ſummer of famine, by plundering Eaglets of vaſt quantities of food which the old ones inceſſantly brought them. In order to protract the attendance of the parent birds beyond the natural time, he clipped the wings of the young; and, by thus retarding their flight, ſecured the advantage of participating in their ſpoils: it was, however, fortunate for this peaſant, that he was not ſurprized by the old Eagles in committing theſe depredations; their reſentments at times proving fatal, as will appear by the following account.

Some years ago, a countryman formed an intention of robbing an Eagle's neſt, which was ſituated in a ſmall iſland in the beautiful lake of Killarney in Ireland. Having ſtripped off his cloaths, he ſwam towards the place while the old birds were abſent; and, after robbing the neſt of the young, was preparing to return with the Eaglets tied together by a ſtring; but, after being immerſed in the water as high as his chin, the old Eagles returned to their neſt, and miſſing their brood, darted inſtantly on the plunderer, who, in ſpite of all the reſiſtance in his power, fell a ſacrifice to their revenge.

In order to the extirpation of theſe pernicious birds, there is a law in force in the Orkney iſlands, where they are very numerous, which entitles any perſon who kills an Eagle to a hen out of every houſe in the pariſh where ſuch bird is deſtroyed.

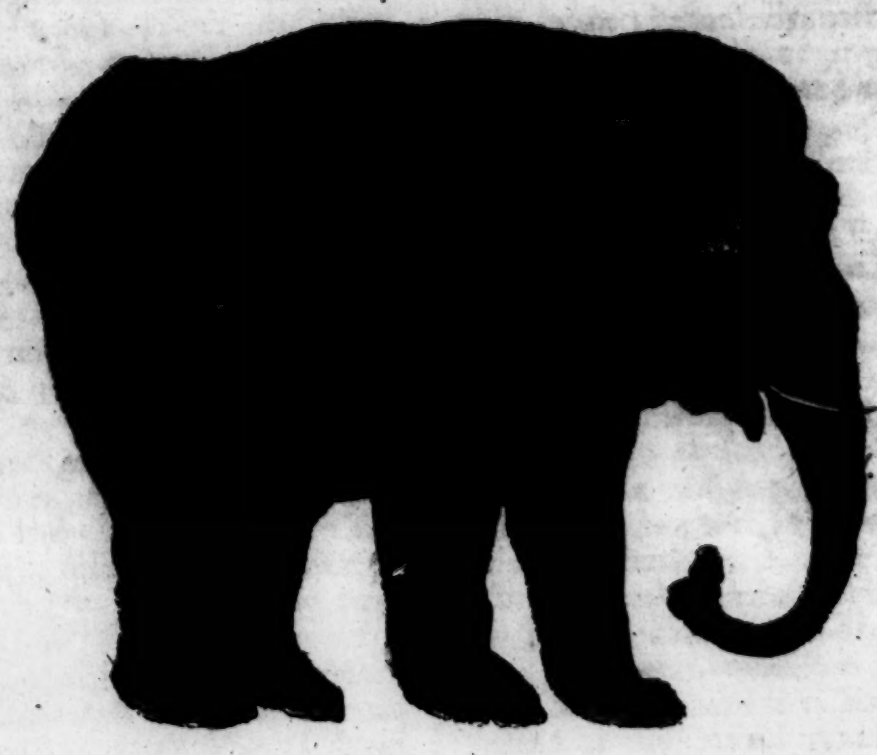
The Eagle has always been regarded as the king of birds, either on account of his great ſtrength, the terror which he inſpires, his natural fierceneſs, or the rapidity and elevation of his flight. Bochart tells us, that he lives a whole century, gradually increaſing in bulk till his death; and, if ſo, we may the more eaſily credit Athenæus, who ſays, that Eagles, having wings twenty cubits long, were exhibited, by way of ornament, at the triumph of Ptolemy. Such is the voracity of this bird, that a large extent of country is ſcarcely ſufficient to furniſh him with prey neceſſary for his ſupport; on which account, as before obſerved, two pair of Eagles are never to be found in one and the ſame quarter. Ariſtotle and Pliny aſſert, that theſe animals chace their young, not only out of their neſts, but even the country they inhabit, as ſoon as they are able to fly. As the Eagle ſubſiſts ſolely on the fleſh of ſuch creatures as he deſtroys, ſo he alſo quenches his thirſt with their blood, never drinking water when in health. The ſwan, it is ſaid, is the only bird that is capable of oppoſing this formidable enemy of the winged tribe; all other birds dreading him to an inconceivable degree, as well as trembling at his cry. Nor are the inhabitants of the liquid element exempted from his voracity; he perceives them, even at the very bottom, as he ſkims over ſeas and lakes; darts downward on them with the rapidity of an arrow; and, dragging them to the ſhore, devours them in an inſtant.

The Eagle's aſtoniſhing ſharpneſs of ſight gives him a decided ſuperiority over every other bird; and of this advantage he ſeems ſo very ſenſible, that, in order to preſerve it in the ſpecies, as ſoon as the young begin to acquire ſtrength, the parent turns them towards the ſun, obliging them to fix their eyes on this dazzling luminary; and, if any one of them is found to be incapable of ſupporting the heat and force of his rays, it is ſpeedily chaſed from the neſt, as unworthy of protection and aſſiſtance: while, on the other hand, ſuch of them as acquit themſelves with reputation in this ordeal, are cheriſhed with remarkable affection, fed with the utmoſt attention, and taught to fly and purſue with aſtoniſhing aſſiduity. The parent bird afterwards bears them on his wings, in ſuch a poſition as to be in no danger from the aim of the fowler; quits them in the middle of the courſe, in order to prove their powers; and, if he perceives that they are either unable to ſupport themſelves alone, or run the ſmalleſt hazard of falling, he darts himſelf below them with the utmoſt celerity, and receives them between his pinions.

The reaſon why the Eagle is thus able ſtedfaſtly to look on the ſun, and to ſuſtain his moſt dazzling rays, is becauſe he is furniſhed with two eye-lids; by one of which his eyes are entirely ſhut; while with the other, which is thinner, they are as it were veiled when beholding any luminous object, and it's glaring light is thereby rendered much more ſupportable. This appendage enables the Eagle to riſe to a prodigious height; and to this inſtinct he owes the renewal of his ſtrength and youth; in which the learned, and even the critics themſelves, are agreed. Every ten years his feathers become heavy, and of courſe leſs proper for flight: he then makes an effort, and approaches nearer the ſun than uſual; where, after being exceſſively heated, he plunges immediately into the ſea; on which his feathers fall off, and are ſupplied by new ones, which reſtore him to his priſtine ſtrength.

Ælian, who aſcribes to the Eagle a peculiar inſtinct of gratitude, gravely informs us, that one which Pyrrhus had brought up, and conſtantly followed him, was ſo ſenſible of the death of that illuſtrious warrior, that he refuſed either to quit his body, or to receive any nouriſhment; and that another threw himſelf into the ſame funeral pile which conſumed the corpſe of his maſter.

The neſt of the Eagle is uſually built in the moſt inacceſſible cliff of a rock, and frequently ſhielded from the inclemency of the weather by ſome jutting crag which overhangs it: at times, however, it is wholly expoſed to the winds, as well ſideways as from above; for it is generally flat, though conſtructed with abundant labour. Some naturaliſts inform us, that one neſt ſerves the Eagle during his whole life; and indeed the great pains taken by the animal in forming it render this concluſion probable. One of theſe habitations was diſcovered in the Peak of Derbyſhire, which Willughby thus deſcribes. 'It was made of great ſticks, one end reſting on the edge of a rock, and the other on two birch-trees. On theſe was placed a layer of ruſhes, and over them a layer of heath, and on the heath another layer of ruſhes; and on them lay an Eaglet and an addled egg; and by them a lamb, a hare, and three heath-pouts. The neſt was about two yards ſquare, and had no hollow in it. The young Eagle was of the ſhape of a goſhawk, and weighed nearly as much as a gooſe; it was rough-footed, or feathered down to the foot, and had a white ring about the tail.'



1. COMMON EAGLE. 2. EGRET. 3. ELEPHANT. 4. ERMINE.

Plate XLV.

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The largeſt ſpecies of Eagles ſeldom lay more than two eggs a piece, and the ſmalleſt never more than three. The female, it is ſaid, hatches them for thirty days; but, notwithſtanding her care and aſſiduity, ſhe ſeldom produces a bird from every egg.

The plumage of Eaglets is not ſo ſtrongly marked as when they become adult: they are at firſt white; afterwards they incline to yellow; and, laſtly, to brown. Age, hunger, long confinement, and diſeaſe, render them ſtill whiter and whiter; but it is ſaid that, when they die at laſt, it is not ſo much through age as from their beaks turning inwards on their under mandibles, and thereby preventing them from taking their neceſſary food. Pennant obſerves, that they are equally remarkable for their longevity and long abſtinence from food; that one of theſe ſpecies, at the time of writing his Britiſh Zoology, had been nine years in the poſſeſſion of Mr. Owen Holland of Conway, as well as lived thirty-two years with the gentleman who made him a preſent of it; but that he was unacquainted with it's age when the latter received it from Ireland. This bird alſo verifies the former remark; for, through the negligence of ſervants, it was once ſuffered to faſt for twenty-one days, not having received any ſuſtenance whatever during that period.

Such are the general characteriſtics and habitudes of the Eagle; though, in ſome ſpecies, theſe habits differ, as will appear in the particular deſcriptions of each.

Eagle, Common. The Common Eagle is of a brown colour; the head and upper part of the neck incline to red; the feathers of the tail are white, except towards their ends, where they are blackiſh; the four exterior ones on each ſide are cinereous; and the legs are cloathed with a reddiſh brown plumage.

Eagle, Golden; the falco chryſaetos of Linnæus. This bird, which is the largeſt and nobleſt of the Eagle kind, weighs about twelve pounds; it's length is three feet, and the extent of it's wings ſeven feet four inches. The bill, which is three inches long, is of a deep blue colour; the eyes are hazel; and both the ſight and ſenſe of ſmelling are very acute. The head and neck are covered with narrow, ſharp-pointed, dark brown feathers, edged with tawny; but, in thoſe which are far advanced in years, the plumage of the crown the head is grey. The whole body is a dark brown, the feathers on the back being delightfully ſhaded with a deeper tinge of the ſame colour. The wings, when cloſed, reach to the end of the tail; the quill-feathers are chocolate-coloured, with white ſhafts; the tail is a deep brown, irregularly barred and ſpotted with an obſcure cinereous, the roots of the feathers being generally white. The legs, which are yellow, ſhort, and very ſtrong, are three inches in circumference, and feathered down to the very feet; and the toes are covered with large ſcales, and armed with very formidable claws, the middlemoſt being two inches long.

This ſpecies is found in the mountainous parts of Ireland, and generally breeds in the loftieſt cliffs. It uſually lays three, and ſometimes four eggs, though ſeldom more than two of them become prolific; Providence mercifully denying a large increaſe to rapacious animals, becauſe noxious to man; but graciouſly permitting an unlimited multiplication of ſuch as are ſerviceable to him. The Golden Eagle has alſo at times been ſeen in Caernarvonſhire; and there are ſome few inſtances of it's having bred on Snowdon Hills; from which circumſtance ſome writers have given that tract the appellation of the Eagle Rocks.

Eagle, Bald. This ſpecies, which inhabits North Carolina, is remarkable for habits peculiar to itſelf. In that country, Eagles breed throughout the whole year; and, as ſoon as the young are covered with down and a kind of white woolly feathers, the females, in order to a future progeny, lay other eggs, and leave them to be hatched by the warmth of the young Eaglets which continue in the neſt; the flight of one brood always making room for the next, which is then but juſt excluded. The Bald Eagle flies very heavily, and is incapable of overtaking it's prey like the reſt of the tribe: it therefore generally attends on the fowlers during winter; and, when any birds are wounded by them, it immediately ſeizes them. It alſo frequently ſteals young pigs, and carries them alive to it's neſt, a very filthy one, compoſed of twigs, ſticks, and rubbiſh, and generally ſtored with half-eaten bones and putrid fleſh. The body of this ravenous bird is brown; the head, neck, and tail, are white; and the upper-parts of the legs are brown.

Eagle, Ring-Tailed; the falco fulvus of Linnæus. This ſpecies, which ſeems to be peculiar to the northern parts of Europe and to America, is of the ſize of the common Eagle; the bill is of a blueiſh horn-colour; the upper mandible, which is arched, hangs over the lower one about an inch, having an angle or tooth on each ſide; and the lower mandible is ſhorter than the upper, and incloſed in it. The irides are hazel-coloured; and the pupil is black. Between the bill and the eyes there are ſpaces of bare ſkin of a dirty hue, thinly ſet with ſmall black hairs; the head and neck are inveſted with narrow brown feathers ending in ſharp points; and the whole body is covered with duſky brown feathers, darker on the back, and lighter on the under-ſide. The breaſt is marked with white triangular ſpots in the middle of each feather; the covert-feathers of the wings are of the ſame colour as thoſe of the body; the quills or flag-feathers of the wings are black; and a few of the quills in the firſt row of coverts next the back are variegated with tranſverſe lines of a darker and lighter colour. The tail, which is of an equal length with the wings when cloſed, is white, except the tips of the feathers, which are black, or dark brown; and the coverts under the tail are a reddiſh brown or bay. The thighs are inveſted with dark brown feathers of a very looſe texture, through which a white down appears in ſome places; and the legs are covered, quite down to the feet, with a ſoft reddiſh brown plumage. There are four toes on each foot, very thick and ſtrong, and covered with yellowiſh ſcales; and the claws or talons, which are black, and very powerful, bend almoſt into ſemicircular figures, and terminate in very ſharp points.

Eagle, Black. This bird, which ſtrongly reſembles the ring-tail Eagle in almoſt every reſpect, is very frequent in Scotland, where it is called the Black Eagle from the colour of it's plumage. It ſeizes the deer between it's horns; and, by inceſſantly beating the eyes of that animal with it's wings, ſoon makes a conqueſt of it: and, in the iſle of Rum, the Eagles have almoſt extirpated the breed of ſtags which uſed to abound there. This ſpecies generally builds their neſts in clifts of rocks near the deer-foreſts; and make great havock, not

only among the fawns, but alſo the white hares and ptarmigans.

The Black Eagle is nearly of the ſize of the golden one; the bill is of a blackiſh horn-colour; the cere is yellow; and the whole body is a deep brown ſlightly tinged with ruſt-colour. The legs are feathered down to the very feet; the toes are yellow; and the claws are black. But the moſt remarkable peculiarity of this bird is a white band on the upper part of the tail; which mark it retains in every ſtage of life, as well as in every country where it is found.

Eagle, Sea; the falco oſſifragus of Linnæus. Sea Eagles are found in ſeveral parts of Great Britain and Ireland. Willughby informs us, that there was formerly an aerie of them in Whinfield Park, Weſtmoreland; and Turner aſſerts, that in his time they were well known in England, on account of their making prodigious havock among all ſorts of fiſh; and that fiſhermen generally anointed their baits with the fat of theſe birds, from a conceit that it poſſeſſed a peculiar alluring quality: nay, ſo very ſuperſtitious were they, that whenever the Sea Eagle hovered over a piece of water, they believed that the finny inhabitants, as if charmed, would riſe to the ſurface with their bellies upwards.

Though the Sea Eagle is no uncommon ſpecies, it ſeems at preſent to be but little known; for, ever ſince the time of Cluſius, it has not been deſcribed by any naturaliſt except the accurate Pennant; and has generally been confounded with the golden Eagle, to which bird indeed it has ſome reſemblance. The colours of the head, neck, and body, are the ſame with thoſe of the golden Eagle, but much lighter: it is alſo far ſuperior in ſize; the bill is larger, more hooked, and arched; and underneath there are ſome ſhort ſtrong hairs or briſtles that form a ſort of beard; from which circumſtance ſome writers have ſuppoſed it to be the aquila barbata, or bearded Eagle, of Pliny. The interior ſides, and the tips of the feathers of the tail, are of a deep brown colour; the exterior ſides of ſome of them are of an iron hue, and of others ſpotted with white. The legs, which are ſtrong, thick, and yellow-coloured, are feathered only a little below the knees; which circumſtance makes an invariable diſtinction between the Sea and the golden Eagle; and this nakedneſs of the legs is of the utmoſt convenience to birds whoſe prey is lodged in the water. The claws are of a deep ſhining black hue, exceedingly large and ſtrong, and hooked into a perfect ſemicircle.

All naturaliſts ſeem to coincide in opinion that the Sea Eagle feeds principally on fiſh, which it ſeizes, when ſwimming near the ſurface of the water, by darting down on them, but not by diving or ſwimming, as ſome authors have aſſerted; and who for that purpoſe have in their deſcriptions given it a webbed foot to ſwim with, and another divided one to catch it's prey. Marten ſays, that thoſe Eagles which inhabit the Weſtern iſles, faſten their talons in the backs of ſalmon, which often riſe to the ſurface of the water, and ſometimes above it, and in that manner carry them off; and that they alſo prey on aquatic fowl: and Pliny, with his uſual preciſion, gives a very agreeable deſcription of the chace, an amuſement frequently enjoyed by the inhabitants in the vicinity of the large lakes formed by the River Shannon.

Eagle, Cinereous. This bird, which is alſo called the erne, is inferior in ſize to the golden Eagle. The beak, cere, and irides, are of a very pale yellow colour, the ſpace between them and the eyes being bare and blueiſh. The head and neck are a pale cinereous; the body and wings are of the ſame hue clouded with brown; the quill-feathers are very dark; the tail is white; the legs, which are a light yellow, are feathered but a very little way below the knees; and the male is conſiderably darker than the female. The bill in this ſpecies is ſomewhat ſtraighter than uſual in the Eagle kind; which circumſtance ſeems to have induced Linnæus to place it among vultures; but, with all becoming deference to ſo reſpectable an authority, it can have no claim to be ranked with that genus, the erne being wholly feathered; whereas the characteriſtic mark of the vulture is, that the head and neck are either quite bare, or only covered with down. The Cinereous Eagle inhabits Scotland and the Orknies, and feeds on fiſh and land animals indiſcriminately.

Eagle, Crowned. This very curious bird is a native of Africa, and was firſt deſcribed by Edwards. It is about one-third ſmaller than the larger ſpecies of European Eagles; but, like them, appears to be bold and intrepid. The bill, and the ſkin which covers the upper mandible, are of a duſky brown colour; the corners of the mouth, which are cleft pretty deep under the eyes, are yellowiſh; the circles round the eyes are a reddiſh orange; the fore-part of the head, the ſpace between the eyes, and the throat, are covered with white feathers variegated with ſmall black ſpots; the hinder part of the head and neck, the back, and the wings, are of a dark brown or blackiſh hue, the exterior edges of the feathers being a lighter brown; the quills are darker than the other feathers of the wings; the ridge in the upper parts, and the tips of ſome of the leſſer coverts of the wings, are white; the tail is brown tranſverſely barred with black, it's under ſide appearing of a dark and light aſh-colour. The breaſt is a reddiſh brown, with large tranſverſe black ſpots on it's ſides; the belly, and the covert-feathers under the tail, are white ſpotted with black; the thighs and legs, down to the very feet, are covered with white feathers beautifully marked with round black ſpots; the feet and claws are very ſtrong, the former being covered with bright orange-coloured ſcales, and the latter with black.

This Eagle can at pleaſure erect the feathers on the hind-part of it's head, ſo as to form a kind of creſt or crown; from which circumſtance it derives it's name; and, like other birds of the ſame ſpecies, it is remarkable for it's voracity and ſharpneſs of ſight.

Eagle, Black-Backed. This bird is of the magnitude of the golden Eagle; the bill is black, and the cere yellow. The head, the hind-part of the neck, the belly, and the coverts of the wings, are ferruginous; and the under-ſide of the neck, the back, and the quill-feathers, are black. That part of the tail neareſt to the root is white, and the reſt of it is black. The legs, down to the very feet, are covered with ferruginous feathers; the toes are yellow; and the claws are black.

Eagle of Pondicherry. This ſpecies is wholly of a cheſnut-colour, except the one half of the ſix exterior tail-feathers, which are black.

Eagle, Oroonoko. This bird has an elegant creſt, of a deep brown colour above, and white ſpotted with black beneath. The upper part of the neck is yellow; and the feathers of the tail are brown with white circles, thoſe of the legs being white ſpotted with black.

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1. BLACK-BACKED EAGLE. 2. CINEREOUS EAGLE. 3. CROWNED EAGLE.

4. RING-TAILED EAGLE.

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EAGLE, BRAZILIAN. The Brazilian Eagle is of a deep brown colour, with an admixture of cinereous in the wings; the tail is white; and the legs are naked.

EAGLE, JEAN LE BLANC. This ſpecies is of a browniſh grey colour above, and white ſpotted with tawny brown below. The feathers on the outſide, and on the extremity of the tail, are brown, thoſe on the inſide being white ſtreaked with brown; and the legs are naked.

EAGLE, ROUGH-FOOTED. The Rough-Footed Eagle is of a dirty iron colour above, and of an iron one mixed with black below. The head and neck are cinereous mixed with cheſnut; the points of the wings are blackiſh; the tail is white; and the legs are bare.

EAGLE, WHITE. This Eagle is invariably of a beautiful white colour throughout; and from this circumſtance it receives it's name.

EAGLE, SEA. A ſpecies of cartilaginous flat fiſh, of the paſtinacha marina kind. The head is almoſt like that of the toad; and the eyes are large, round, and prominent. The tail, which is long, ſlender, and ſometimes above two ells in length, is armed with a long ſharp weapon, the wound of which being extremely dangerous, is avoided by mariners with the moſt careful circumſpection. The body is larger than that of the fire-flaire; the mouth is full of teeth; and the ſkin is ſoft and ſmooth, the upper part being livid, and the under white.

Theſe fiſh are generally taken when ſmall, but ſome have been caught which weighed upwards of three hundred pounds. They may eaſily be diſtinguiſhed from other griſtly fiſh by the length of their tails, as well as by their large weapons or ſpines, which are ſometimes ſingle, and ſometimes double, but always venomous. They inhabit the Mediterranean ſeas, and are often brought to the markets of Rome and Naples. Their fleſh is ſoft and moiſt; but having a rank nauſeous ſmell, it is therefore ſeldom ſerved up at the tables of the opulent. They receive their name from their thin broad ſides, which repreſent the expanded wings of eagles.

EAR-SHELL. In the Linnæan diſtribution, a ſpecies of the haliotis. The characters of the Ear-Shell are theſe: it conſiſts only of one ſhell or valve, of a flatted ſhape, and ſomewhat reſembling the human ear; and at the baſe there is a very wide mouth or aperture, the largeſt in any ſhell except the patella or limpet.

Aldrovandus and Rondoletius have given this genus the name of patella fera, or wild limpet; but in this diſtribution they have few imitators, as it confounds the auris marina and patella, which are abſolutely two diſtinct genera.

This genus ſometimes yields ſmall pearls, the rudiments of which are frequently ſeen in thoſe ſhells which have not brought them to perfection; and the whole internal ſide of the ſhell is of the colour of the moſt beautiful mother-of-pearl: this alſo appears externally, when the rough coat is ſo far corroded by acids, as to leave this pearly ſubſtance naked; in which caſe it makes a very elegant appearance, poſſeſſing the ſplendor of the moſt beautiful mother-of-pearl both within and without; and in this ſtate it is frequently preſerved in the cabinets of the curious.

This ſhell, both internally and externally, is marked with very high ribs, which run from one ſide to another; and in every ſpecies of theſe ſhells there is a row of holes near one edge, of which ſix are uſually open; and beyond theſe are the marks of three or four more, which do not entirely perforate the ſhell: theſe are formed in the growth of the fiſh, which, as it enlarges, extends the ſhell; and, when a new rim is formed, wherein there is an open hole, one of the hinder ones is always cloſed up by the ſuperaceſſion of freſh ſhelly matter.

EAR-SHELL, GREAT. This ſpecies is five inches in length, and nearly three in breadth; and it's ſhape is an irregular oval, the end where the ſpiral turn is placed being the largeſt. The back, or hinder edge, is thick, and ſo turned as to form a kind of lip; the fore-edge is thin, ſimple, and even; and the upper ſurface is brown, rough, and uneven, with a kind of undulated line; the part neareſt the head is thickeſt; and the ſpiral turn is ſhort and depreſſed. Along the back-part of the ſhell, near the thickeſt edge, there is a row of roundiſh-ſhaped holes, ſeven of which are open; and there are the marks of ſeveral others which do not penetrate quite through the ſhell. The internal ſurface is of a beautiful pearl hue, apparently variegated with ſeveral bright colours when placed in different directions of light; and there are alſo a kind of watery protuberances having the appearance of pearls. This ſhell is chiefly found in the Eaſt Indies.

EAR-SHELL, LONG. The Long Ear-Shell, which has an undulated head and eight holes, is three inches long, and an inch and a quarter broad, but not more than half an inch high. The head is large; and the ſpiral turn is very beautiful and fair. The back of the ſhell forms an even lip, the fore-edge being thin and undulated; the external ſide is ſmooth except where it receives a ſlight undulation from the ſpiral turn, and is of a greeniſh colour variegated with a browniſh red; the internal ſide is of a pearly hue finely diverſified with a variety of other tints; and on the back-edge there is a long row of holes, eight of which are always open. This ſpecies, which is found adhering to the rocks on the Malabar coaſt, in the Eaſt Indies, is much admired.

EAR-SHELL, STREAKED, OR WRINKLED. This ſpecies, which has ſix holes, is three inches and a half in length, and two in diameter near the head. It is externally of a duſky brown colour; and exhibits many ſlight irregular undulated ridges, which begin near the ſpiral end, though they almoſt vaniſh before they reach it.

EAR-WIG. A genus of inſects of the order of coleoptera. The tail forms a kind of forceps endued with the faculty of pinching; the exterior wings are very ſhort, but dimidiated; and the antennæ are ſetaceous. The feet are ſix in number; and the body is about the thickneſs of a ſmall worm, and very ſmooth.

Though not produced quite perfect from the egg, this inſect requires but a very ſmall change before it arrives at that ſtate which fits it for flight and generation. It's natural functions are never ſuſpended: from the inſtant it leaves the egg, it continues to eat, move, leap, and purſue it's prey; and a ſkin which incloſed a part of it's body and limbs burſts behind, and gives full play to a ſet of wings with which the animal flies in purſuit of it's mate.

The ſwiftneſs of the Ear-Wig, in it's reptile ſtate, is not leſs remarkable than it's indefatigable velocity when on the wing. That it muſt be very prolific, appears from the great numbers produced;

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and that it is exceedingly harmleſs, almoſt every perſon's experience can teſtify. With it's tail, which is forked, it frequently attempts to defend itſelf againſt it's aſſailants; but ſuch efforts are merely the threats of impotence, as they only draw forth the aggravated reſentment of more powerful animals without conducing to it's own preſervation. The deformed figure and ſlender ſhape of the Ear-Wig have alſo ſubjected it to an imputation, which, though totally founded in prejudice, often operates to it's deſtruction: it is ſuppoſed frequently to enter the ears of perſons when aſleep, and to cauſe intolerable pain; the conſequence of which is madneſs, and ſoon after death itſelf. Indeed, it's French appellation, importing an Ear-piercer, urges the calumny againſt this harmleſs inſect in very pointed terms: but nothing can be more unjuſt; for the ear contains a thick tenacious ſubſtance capable of entangling any inſect that might attempt to enter it; beſides, being well lined and defended with membranes, none of theſe animalcules could gain admiſſion if the ear-wax was removed. Such a ſuppoſition, therefore, muſt be vague, and even groundleſs. The charges which gardeners bring againſt theſe inſects are not, however, ſo deſtitute of foundation; for there is nothing more certain, than that they live among flowers, and deſtroy them; and when fruit alſo has been wounded by flies, the Ear-Wigs generally come in for a ſecond feaſt, and extract thoſe juices which before were only broached. Still, however, theſe creatures are leſs noxious in that reſpect than is generally believed; and they are but rarely the firſt promoters of any miſchief.

As there are various ſpecies of theſe animals, ſo they fix on different breeding-places; but, in general, they depoſit their eggs under the bark of plants, or of trees which have begun to decay. They proceed from the eggs in that reptile ſtate in which they are moſt commonly ſeen; and, as they grow larger, their wings, bound under the ſkin, begin to protrude. The ſheaths in which their wings are enveloped cover them ſo neatly, that the animals ſeem totally deſtitute of wings; and, even when they have burſt from their confinement, by means of the muſcles and joints in the middle of the wings, they fold together in a very narrow compaſs.

Whenever the Ear-Wig becomes an inhabitant of the ſky, it flies in purſuit of the female, ceaſes to feed, and is wholly employed in the buſineſs of generation. It exiſts in it's winged ſtate but a very ſhort time; and, after having provided for a continuance of poſterity, it begins to waſte, and dies in a few days of an univerſal conſumption.

The dried powder of Ear-Wigs is eſteemed ſalutary in caſes of deafneſs, and the oil prepared from them in ſpaſms and convulſions.

EAR-WIG, SEA. See FORFICULA MARINA.

EARTH-PIKE. A ſpecies of Weſt Indian lizard, called ſchink by ſome authors, from a ſuppoſition that it reſembles the Egyptian animal of that name. It obtains the appellation of the Earth-Pike from it's fancied ſimilitude to the River-Pike when the legs are amputated. This animal is very fleſhy; the tail is more thick than is uſual in the lizard genus; but the legs are ſo very ſhort, that it is barely able to creep along the ground. The ſkin is covered with a vaſt number of ſmall ſcales like thoſe of ſerpents, of a yellow ſilvery colour ſhining as if rubbed with oil. The fleſh of this creature, if eaten in moderation, is pretended to be an antidote againſt poiſons, and wounds inflicted by envenomed arrows.

Another ſpecies of the Earth-Pike is frequently found in wet and marſhy ſituations. This very deformed creature is about ſeven inches in length; the back is covered with black and grey ſpots; the lower part of the belly, which is ſcaly, ſhines as if anointed with oil; the colour of the ſkin is a paliſh yellow; the head is little, and accuminated; the mouth is pretty wide, and armed with ſharp teeth; and the eyes, which are very ſmall, are incapable of ſupporting the glare of day-light. As ſoon as this animal is forced from under ground, it immediately endeavours to regain it's ſubterraneous abode, by digging the earth, like the mole, with it's hard hooked claws. It is extremely injurious to gardens and orchards, where it gnaws the roots of trees and plants. It's bite is alſo accounted venomous, and is perhaps not leſs ſo than that of the moſt poiſonous ſerpent.

EARTH PUCERONS. An appellation given by naturaliſts to a ſpecies of Puceron which makes choice of a very ſingular habitation. If, during the month of March, the turf of any dry paſture be raiſed in ſeveral places, there will be found under various parts of it cluſters of ants; and, on a more minute inveſtigation, it will uſually appear that theſe emmets are collected round ſome Pucerons of a peculiar ſpecies, which are large, of a greyiſh colour, and generally found in the middle of a cluſter of piſmires.

The common abodes of the ſeveral other ſpecies of Pucerons are in the young branches or leaves of trees; and, as the ſap or juice of vegetables conſtitutes their only food, probably theſe earthy kinds extract the moiſture from the roots of graſs and other plants, in the ſame manner as others do from their different parts. The ſame ants which conduct us to theſe Pucerons alſo direct us where to find the greater part of the other ſpecies; for this reaſon, namely, that as theſe creatures feed on the ſaccharine juices of plants, they are evacuated from their bodies in a liquid form, very little altered from their original ſtate; and the ants, which are fond of ſuch food, find it ready prepared for them in the excrements which theſe little animals are continually voiding.

EARTH-WORM. A well-known inſect belonging to the genus of inteſtines; which, being entirely deſtitute of feet, trails itſelf along the ground, till it finds a retreat either under the ſurface of the earth or in the water. A ſpiral muſcle runs round it's whole body, from the head to the tail, ſomewhat reſembling wire wrapped round a walking-ſtick, which, when ſlipped off, and one end extended and held faſt, will bring the other nearer to it; and in this manner the animal having extended it's body, lays hold of the ſlime of the fore-part of it's frame, and ſo contracts and brings forward the hinder part; in that poſition moving on, though not without great efforts: but the occaſions for it's progreſſive motions being but few, it's ſtruggles are not often reiterated.

Deſtined by nature to a ſubterraneous abode and a life of obſcurity, all the powers of the Earth-Worm ſeem adapted to it's ſituation. It's body is armed with ſmall, ſtiff, ſharp prickles, which it can either erect or depreſs at pleaſure; and under the ſkin there is a kind of ſlimy juice, which the creature ejects, as occaſion requires, at certain perforations between the rings of the muſcles, in order to lubricate it's body, and thereby facilitate it's

it's body, and thereby facilitate it's paſſage into the earth. Like the generality of inſects, it is furniſhed with breathing-holes along the back, adjoining to each ring; but it has neither bones, eyes, nor ears: however, it has a mouth, as well as an alimentary canal, which extends to the very extremity of the tail; but in ſome worms, particularly ſuch as are found in the bodies of animals, this canal opens towards the middle of the belly, at a conſiderable diſtance from the tail. The inteſtines of theſe worms are always filled with a very fine earth, which appears to be the only nouriſhment they are capable of receiving.

The Earth-Worm is entirely deſtitute of brains; but the heart, which is ſituated near the head, is ſeen to beat with a very diſtinct motion; and round it are placed the ſpermatic veſſels, which form a number of little globules containing a milky fluid, and having a communication with the belly not far from the head: in theſe alſo numbers of eggs are frequently found; which, being laid in the earth, are hatched in twelve or fourteen days through the warmth of their ſituation.

Theſe worms, like ſnails, unite in themſelves both ſexes at once, the reptile which impregnates being fecundated in it's turn; and perhaps there are but few perſons who have not obſerved them with their heads placed againſt each other, and ſo ſtrongly attached, as to ſuffer themſelves to be very roughly handled rather than be diſengaged.

The eggs of the Earth-Worms being laid in the earth, and brought to maturity in about fourteen days, as before obſerved, the young ones iſſue forth, very ſmall, but perfect in their formation, and ſuffer no farther change during the whole period of their exiſtence; but how long their lives are protracted, is not well aſcertained, though they certainly extend to two or three ſeaſons. At the commencement of winter, they bury themſelves deep in the earth, and appear in ſome meaſure to ſhare in the general torpidity of the inſect tribe: but in ſpring they revive with the reſt of nature; and a moiſt or dewy evening generally draws them from their retreats, for the purpoſe of propagating their kind. They live chiefly in a light rich ſoil, moiſtened by dews or accidental ſhowers; but avoid thoſe ſituations where the water is apt to remain on the ſurface of the earth, or where the clay is too ſtiff for their eaſy progreſſion under ground.

Deſtitute and helpleſs as theſe reptiles may ſeem to be, they are extremely vigilant in avoiding all ſuch animals as naturally prey on them; and in particular the mole, that feeds entirely on theſe creatures beneath the ſurface of the earth, and which, from the dimneſs of it's ſight, ſeldom ventures into the open air: this enemy they avoid by darting up from the earth the inſtant they perceive the ſoil begin to move; and fiſhermen, who are well acquainted with this inſtinct, take them in whatever numbers they pleaſe, by ſtamping on the earth where they expect to find them. They are alſo eaſily driven from their ſubterraneous retreats by pouring bitter or acrid water over them, ſuch as that in which green walnuts have been ſteeped, or a lye made of potaſhes.

The foregoing are the general outlines of the hiſtory of theſe Worms; and, ſo far as we have proceeded, nothing has been remarked which appears to degrade them beneath the rank of other animals of the inſect creation: but we now come to that part of it which proves the imperfection of their organs, from the facility with which theſe little machines may be damaged, and again repaired. It is a well-known axiom in mechanics, that the fineſt and moſt complicated inſtruments are the ſooneſt deranged, and with the greateſt difficulty adjuſted. The ſame alſo holds good in the animal œconomy: man, the moſt intricate machine of all others, whoſe nerves are very numerous, and his powers of action exceedingly various, is eaſily deſtroyed, frequently by caſualties which even birds or quadrupeds readily ſurvive; and, as we deſcend gradually to the lower ranks, the ruder the compoſition, the more difficultly is it diſarranged. Some animals exiſt without their limbs, and often reproduce them; and others live deſtitute of brains for many weeks together: caterpillars continue to increaſe and extend themſelves, though all their noble organs within are entirely deſtroyed; ſome creatures, though cut in ſunder, ſtill exiſt, and their nobler parts preſerve life, while their amputated ones periſh; but Earth-Worms, as well as all the zoophyte tribe, continue to live in ſeparate parts; and one animal, by means of ſecation, is divided into numerous diſtinct exiſtences.

Throughout the extenſive ſubject of natural hiſtory, no phenomenon is more aſtoniſhing, than that man ſhould at pleaſure enjoy a kind of creative power, ſo as out of one life to produce two; each compleatly formed, with all it's apparatus and functions; each having it's perceptions, and powers of motion and ſelf-preſervation; and each being as compleat in every reſpect as that from which it derived it's exiſtence, and equally enjoying the humble gratifications of it's nature.

When the ingenious, though enthuſiaſtic, Des Cartes, firſt broached the doctrine that brutes were machines, the diſcovery of this ſurprizing propagation was unknown, otherwiſe it would in ſome meaſure have ſtrengthened his fanciful theory. He would naturally have aſked, What is life in brutes? or, Where does it reſide? In ſome, we find it ſo diffuſed, that every part ſeems to maintain a vivacious principle; and the ſame animal appears to be poſſeſſed of a thouſand diſtinct irrational ſouls at one time. But nothing, in reality, deſerves the name of ſoul, but that which reaſons, underſtands, and is impreſſed with the image of it's Creator.

Such might probably have been the ſpeculations of this philoſopher: but, quitting his theory, ſuffice it to remark, that we are indebted for the firſt diſcovery of this power of reproduction in animals to Mr. Trembley, who obſerved it in the polypus; and, after him, to Spalanzani, and ſome other ingenious naturaliſts, who found it prevail in the Earth-Worm, the Sea-Worm, and ſeveral other rudely-conſtructed animals of a ſimilar kind which were ſuſceptible of this novel mode of propagation. This laſt gentleman, to whom natural hiſtory in general is under the higheſt obligations, tried ſeveral experiments on Earth-Worms, many of which ſucceeded according to his expectations, though every individual animal did not maintain it's vivacious principle with an equal degree of firmneſs: ſome, when cut in two, were entirely deſtroyed; others ſurvived only in their nobler parts; and, while their heads continued to be animated, their tails periſhed, and new animals were obſerved to proceed from their extremities. But, what was moſt aſtoniſhing, in ſome of theſe Worms, particularly the ſmall red-headed ones, both extremities ſurvived the operation: the head produced a tail with an anus, the inteſtines,

the annular muſcle, and the prickly beards; the tail-part, on the other hand, begat the nobler organs; and, in leſs than three months, ſent forth a head, a heart, and all the apparatus and inſtruments of generation. The completion of this laſt part, as we may reaſonably ſuppoſe, proved much more tardy than the former, a new head requiring about three or four months in order to perfection; while a freſh tail arrived at it's full maturity in leſs than as many weeks. Thus two animals, by being diſſected, were produced from one, each endowed with it's diſtinct appetites, with perfect life and motion, and in every reſpect as compleat as that ſingle one from which each derived it's origin.

The foregoing operation, performed on the Earth-Worm, obtained alſo with reſpect to many others of the vermicular tribe; namely, the Sea-Worm, the White-Worm, and many of thoſe ſmall ones with feelers, which are found at the bottoms of dirty ditches; in all of which the nobler organs were of ſo very little uſe, that, when removed, the animals did not ſeem at all ſenſible of their loſs, for they lived in all their parts: and thus, by a ſtrange paradox in nature, the moſt uſeleſs and contemptible lives are, of all others, extinguiſhed with the greateſt difficulty.

The Earth-Worm, when full-grown, often meaſures ten or more inches in length, and upwards of one-third of an inch in diameter; and it's colour is univerſally known to be a duſky red. But, beſides the common Earth-Worm, there is another ſpecies found in mud about the ſea-ſhores, which often grows upwards of a foot long, and entirely reſembles the former, except that it's colour is a paler red, and that it's ſkin is covered with little prominences which render it rough and ſcabrous to the touch.

Earth-Worms are by ſome accounted very efficacious in medicine, as diuretics, diaphoretics, and anodynes; they are alſo eſteemed diſcutient, emollient, and deobſtruent: and many are of opinion that they may be preſcribed with ſucceſs in apoplexies, ſpaſms, and other nervous affections; as well as in the jaundice, dropſy, and colick.

ECHENEIS. An appellation given by the ancients to ſome kinds of the petromyza; and Appian in particular evidently intends thereby to expreſs the common lamprey.

ECHINODERMA. A term by which naturaliſts frequently expreſs the echini marini, or ſea-urchin.

ECHINOPHORA. A name given by Rondeletius to a ſpecies of ſea-ſnail of the round-mouthed kind, or claſs of cochleæ lunares; but this author ſeems to confound the echini with his Echinophoræ.

ECHINUS MARINUS, or SEA-URCHIN. A genus of animals having their bodies covered with a ſutured cruſt, who are often furniſhed with moveable ſpines, and whoſe mouths are quinque-valve and placed beneath.

The Echinus, on a ſlightiſh inſpection, may be compared to the huſk of a cheſnut, being at once round, and beſet with a great number of bony prickles projecting on every ſide. The mouth is placed downwards; and the vent is ſituated above. The ſhell, which is a hollow vaſe reſembling a ſcooped apple, is filled with a ſoft muſcular ſubſtance, through which the inteſtines wind from the bottom to the top. The mouth is large, red, and furniſhed with five ſharp teeth, which are eaſily diſcerned; the jaws are ſtrengthened by five ſmall bones, in the centre of which there is a ſmall fleſhy tongue, whence the inteſtines make a convolution of five ſpires round the internal ſides of the ſhell, and end at the apex, where the excrements are excluded. But, what conſtitute the moſt remarkable parts of the conformation of this animal, are it's horns and ſpines, which point from every part of the body, and ſerve at once as legs, arms, and inſtruments of annoyance and defence. Between theſe horns there are alſo ſpines, which are not endowed with ſuch a ſhare of motion. The ſpines are hard and prickly; and the horns, which are long and ſoft, and never ſeen but in the water, are protruded and retracted like thoſe of the ſnail, being concealed at the baſes of the ſpines when not wanted for the more immediate ſervice of the animal. All this apparatus, however, is only perceivable when the Echinus is buſied in hunting it's prey at the bottom of the water; for, in a very few minutes after it is caught, all the horns withdraw into the body, and the greateſt part of the ſpines drop off.

It is generally ſuppoſed, that ſuch creatures as have the greateſt number of legs always move the ſloweſt: but the Echinus ſeems to be an exception to this rule; for, though furniſhed with upwards of two thouſand ſpines and twelve hundred horns, all ſerving the purpoſes of legs, and from their number ſeeming to impede each other's motion, it runs with no ſmall degree of ſwiftneſs at the bottom, and is frequently overtaken with difficulty, but generally at ebb-tide, either by means of an oſier baſket, or ſimply with the hand.

Some ſpecies of Echini are reckoned as excellent food as lobſters; and their eggs, which are of a deep red colour, are conſidered as a peculiar delicacy: but the flavour of others is very indifferent; and, except in the Mediterranean ſeas, they are ſeldom ſought for but as objects of curioſity.

ECHINUS, EDIBLE. This ſpecies, which is of an hemiſpherical form, covered with ſharp ſtrong ſpines above half an inch long, commonly of a violet-colour, moveable, and adherent to ſmall tubercles elegantly diſpoſed in rows, is often found in dredging, and frequently lodges in cavities of rocks juſt within low-water mark.

Echini of this ſort at preſent conſtitute the food of the poor in many parts of Britain, and alſo of thoſe of the firſt quality in ſome foreign countries. In ancient times they were accounted very delicious, being uſually dreſſed with vinegar, honied wine, parſley, and mint; and, according to Athæneus, were perfectly agreeable to the ſtomach. They likewiſe compoſed the principal diſh at the famous ſupper of Lentulus, when he was made Flamen Martialis, or Prieſt of Mars; and, from ſome of the concomitant diſhes, they appear to have been intended as a whet to the appetites of the holy perſonages, prieſts, and veſtals, invited to this banquet, againſt the ſecond courſe.

ECHINUS, CORDATED. This animal, agreeably to it's name, is of a cordated ſhape, gibbous at one end, and marked with a deep ſulcus at the other covered with ſlender ſpines reſembling briſtles; and the ſhell is extremely fragile.

ECHINUS, OVAL. This ſpecies, which is oval and depreſſed, is of a purpliſh colour on the top marked with a quatre foil, the intermediate ſpaces being tuberculated in wavy rows; and the lower ſide is ſtudded, and divided by two ſmooth ſpaces. This ſhell, which meaſures four inches in length, and,

and, when cloathed, is covered with ſhort thick-ſet briſtles mixed with ſome very long ones, is found near Weymouth. Borlaſe has given a figure of an Echinus which reſembles the above; but neither the print nor deſcription enable us to determine whether it is of the ſame or a diſtinct ſpecies.

An infinite variety of Echini are found in a foſſile ſtate, of which only a few have yet been diſcovered recent: however, the different genera of theſe foſſile ſhells are uſually known among authors under the names of ſpatagi, cordati, galeati, pileati, diſcoides, ovarii, and pentaphylloides.

EDOLIO. A bird peculiar to the Cape of Good Hope; ſo called from it's repeating diſtinctly the word Edolio. It exactly reſembles the cuckow both in ſhape and ſize, and is frequently ſeen on thick buſhes and high trees; but by what name it is known among the native Hottentots, we have not learned.

EEL; the Muræna Anguilla of Linnæus. The Eel, from many parts of it's natural hiſtory, appears to be a very ſingular fiſh, and in ſome reſpects to border on the nature of the reptile tribe. During the night it frequently quits the water, it's native element, to wander in meadow-grounds, not only for the ſake of changing it's habitation, but alſo of feeding on ſuch ſnails as it meets with in it's paſſage; and in winter it buries itſelf deep in the mud, where, like the ſerpent race, it continues in a ſtate of torpidity. So very impatient of cold are theſe creatures, that, in ſevere weather, they will eagerly take ſhelter in a wiſp of ſtraw flung into a pond; which device has ſometimes been practiſed in order to catch them: and Albertus informs us, that he has known Eels betake themſelves, during the brumal ſeaſon, to a hay-rick, where they periſhed through exceſſive cold.

Morton, in his Hiſtory of Northamptonſhire, obſerves, that there is a ſpecies of ſmall Eels, having ſmaller heads and larger mouths than the common kind, found in cluſters at the bottom of the River Nyme, and hence called Bed-Eels: theſe are frequently rouſed from their retreats by violent floods, when their ſtomachs are always found wholly deſtitute of meat. This circumſtance bears ſuch an analogy to the cluſtering of blind-worms in their quieſcent ſtate, that it is undoubtedly a farther proof of a partial agreement in the nature of the two genera.

There is ſcarcely any animal whoſe generation has ſo much puzzled and perplexed the ſyſtems of the learned and inquiſitive as this. Ariſtotle firſt broached an opinion, that Eels were of the common gender, and that they did not propagate their ſpecies like other animals, but were equivocally engendered by the mud. Wild and abſurd as this hypotheſis muſt appear to every rational mind, it nevertheleſs met with many abettors in more enlightened ages. Modern enquirers, however, have been ſo well inſtructed in the ſyſtem of animal generation by the works of Swammerdam, Lewenhoeck, Malpighi, Redi, Ray, and numerous other reſpectable writers on the ſame ſubject, that there now remains no doubt that all animals are produced by the contact of parents like themſelves: and the phenomenon of Eels being found in new ponds is eaſily accounted for, if we credit Dr. Plot, who confidently aſſerts, that whole droves of them will ſometimes leave one ditch or pond, and croſs the meadows, as well in ſearch of food, as of new retreats. We are well aware, that the Eel retains it's vital principle longer than any other fiſh, after being taken out of the water; nor is it difficult to conceive, that it may, without any inconvenience, ſpend ſo much time out of that element as is neceſſary for the paſſing from one piece of water to another contiguous one: nor, when a number of theſe creatures have found a new pond, is it at all ſurprizing that they continue in it, ſince they feed on worms and other inſects, of which it is extremely probable they find abundance in ſuch parts of the earth as have been newly turned up, and where they have not preyed before.

But though the literati are now generally agreed that Eels are produced, like other animals, by parents of their own kind, ſtill there remain many doubts concerning the manner in which this buſineſs is effected. Some allow Eels to be like the generality of other animals of diſtinct ſexes in the different individuals; while others affirm that they are all hermaphrodites, each poſſeſſing the parts of generation of both ſexes. Rondeletius aſſerts, that they are of different ſexes; and Mr. Allen, who has publiſhed a very curious paper concerning them in the Philoſophical Tranſactions, is of the ſame opinion; both affirming that the parts of generation are perceptible on a careful inſpection, and ſome diſcoverable to be males, and others females: but theſe members (they tell us) being buried in a vaſt quantity of fat, are very difficult to be diſcerned; and conſequently Ariſtotle, who was unable to diſcover them, concluded that they did not exiſt at all, which opinion his followers have adopted.

Among thoſe authors who allow Eels to be produced, like other creatures, from animal parents of different ſexes, ſome are of opinion that they are viviparous; others, that they are oviparous. But Mr. Chartwind ſeems to have concluſively determined this great argument, by obſerving, that if the aperture under the belly of the Eel, which appears red during the month of May, be cut at that time, the young Eels will be obſerved to come forth alive after the operation. Lewenhoeck informs us, that he found an uterus in every Eel which he examined, and therefore concludes them to be hermaphrodites: he alſo conjectures that they have no male parts of generation like thoſe of other animals; but that the office of theſe is performed by a fluid analagous to the male ſeed of animals, contained in certain glands ſituated on the inſide of the uterus itſelf. However, it has been ſufficiently proved by modern experiments, that the immediate generation of Eels is effected in the ordinary courſe of nature, and that the animals themſelves are viviparous.

The Eel is extremely voracious in it's appetite, as well as deſtructive to the fry of fiſh. The eyes are placed at a ſmall diſtance from the end of the noſe; the irides are tinged with red; the teeth are ſmall, ſharp, and numerous; the under-jaw is longer than the upper; beneath each eye there is a minute orifice; and at the extremity of the noſe there are two others, ſmall and tubular. The two pectoral fins are rounded at their ends; a narrow fin extends along the back, and unites with that of the tail; the anal fin joins in the ſame manner beneath; and the orifice of the gills is ſituated behind the pectoral fin.

Eels vary in their colours, from a ſooty hue to a light olive green; and thoſe which are called ſilver Eels have white bellies, and poſſeſs a remarkable brightneſs throughout.

There is a variety of this Eel known in London and it's vicinity by the name of the grig, and at Oxford

Oxford by that of the grig or glut. The head is larger, the noſe more blunt, and the ſkin thicker, than in thoſe of the common ſort; neither is it ſo fat, ſo large, nor ſo much eſteemed, as the common Eel, which ſometimes weighs upwards of twenty pounds; and notwithſtanding it is the moſt univerſal of all fiſh, it is very rarely found in the Danube, though very common in the lakes and rivers of Upper Auſtria. It appears that the Romans paid little regard to theſe fiſh; but the luxurious Sybarites were ſo fond of them, that they exempted thoſe who ſold them from every kind of tribute.

Thoſe Eels which are caught in rivers, or other clear running waters, are generally preferred. Boerhaave ſays, that no fiſh whatever have more acrid galls than Eels; and farther obſerves that, with an admixture of thoſe of the Eel and the pike made into pills, he hath cured many ricketty children who were afflicted with hard and ſwelled bellies.

The Eel, though it generally lives in freſh water, ſometimes enters the ſea, and returns back again to it's former abode. It delights in pure running ſtreams; and, if confined to muddy water for any length of time, becomes lean, flaccid, and at laſt dies. Indeed, it cannot ſupport any conſiderable difference of living; for, were it to be conveyed, even in the ſummer ſeaſon, from a moderately tepid to a more frigid ſtream, it would ſoon periſh. It feeds on roots, herbs, fiſh, inſects, and whatever elſe it meets with at the bottoms of rivers: and Athenæus gravely informs us that, in a certain country, he has known Eels ſo far tamed, as to approach and ſeize any food preſented them with the hand.

Eels generally live to the age of ſeven or eight years, and afford an excellent aliment: their fleſh, which is tender, ſoft, and nouriſhing, contains many oily and balſamic parts; but it has alſo others that are of a dull, viſcous, and groſs nature, and render it hard of digeſtion. Theſe fiſh may be roaſted, fried, broiled, or boiled: but thoſe which are roaſted appear to be the moſt wholeſome; for this reaſon, becauſe they are thereby more diveſted of their viſcous phlegm than by the other modes of dreſſing. Their fat is eſteemed excellent in removing marks of the ſmall pox from the face, in curing the piles, and in cauſing the hair to grow. A kind of mucilage is made of their ſkins by ſteeping and boiling them in water, which is frequently applied to ſwellings, in order to ſoften and diſſolve them; and it is alſo ſerviceable in the hernia.

EEL, CONGER. This ſpecies, with regard to it's general conformation, reſembles the common Eel; but differs materially from it in ſize, ſome Congers being ſeveral yards long, and as thick as a man's thigh: the colour of the back alſo is lighter than that of the common Eel, being more of an aſh; the belly is whiter; the eyes are larger in proportion; the irides are ſilvery; and on the ſides there is a ſtraight, white, broadiſh line, ſeemingly compoſed of a double row of points, which reaches from the head to the tail. The upper edge of the dorſal fin is blackiſh throughout it's whole length; and the end of the upper chap, or ſnout, is furniſhed with two ſhort horns, or tubes, which abound with a mucilaginous fluid. Some ſuppoſe the fleſh of the Conger to be as ſweet and ſalubrious as that of the common Eel; but it is undoubtedly neither ſo delicious nor ſo eaſily digeſted. See CONGER-EEL.

EEL, SAND, or LAUNCE. This fiſh, like the common Eel, is long and round, but it ſeldom exceeds a foot in length: it is blue on the back, and of a ſilver-colour on the belly and ſides; it has a ſharp ſnout, and a wide mouth deſtitute of teeth; the lower jaw is longer than the upper; and it has no ſcales. A long fin extends along the back within a ſmall ſpace of the tail; and there are a pair of fins at the gills, but none on the belly. Theſe fiſh generally lie half a foot deep in the ſand; and, when the tide ebbs, the fiſhermen on the Corniſh coaſt and the Iſle of Man angle for them with hooks conſtructed for that purpoſe. Their fleſh, which is very ſweet and ſalubrious, proves an excellent bait for other fiſh.

There is another ſpecies of Sand-Eel, which differs from the former in having two fins on it's back, whereas that has only one.

EEL, INDIAN. An Eaſt Indian fiſh, the anguilla Indica of authors: of which there are two ſpecies; the one being entirely ſpotted with brown, and the other of a fine yellow colour ſtreaked with red. The fleſh of both is reckoned unwholeſome.

EEL, SEA. A fiſh commonly found among rocks about the ſhores of many parts of the Eaſt Indies. It is of a duſky brown colour, variegated with rhomboidal ſpots not very unlike thoſe on the ſkins of ſnakes; the anterior part of the body is thin and ſlender, the hinder part being very thick; the noſe is long; the mouth is large, and commonly open; and the teeth are very ſharp and ſmall.

Sea-Eels grow exceſſively fat, and are very wholeſome and delicious food; though it is ſaid that thoſe who kill them are affected with tremors, and ſometimes with drowſineſs; but which generally go off without any material injury.

EEL, ELECTRIC. See RAY, ELECTRIC.

EEL, MICROSCOPIC. The long-bodied animalcules diſcovered by the help of microſcopes in vinegar, ſour paſte, and many other ſubſtances, have, on account of their figure, been diſtinguiſhed from the reſt of the microſcopic animalcules by the name of Eels: theſe, as well as the other kinds, have been ſuppoſed by the moſt judicious naturaliſts to be produced from the eggs of other animalcules of the fly kind floating in the air; but thoſe in paſte are diſcovered to be viviparous animals, which produce living creatures of their own ſhape. In order to be always furniſhed with theſe minute animals for microſcopic obſervations, ſuch paſte as bookbinders commonly uſe, and of a moderate conſiſtence, ſhould be expoſed to the air in an open veſſel, and prevented from becoming hard or mouldy by being occaſionally ſtirred. After ſome days, it will turn ſour; when, if attentively examined, multitudes of extremely ſmall, long, and ſlender animalcules, may be diſcovered in it, which will daily grow larger, till at length they will be perceptible by the naked eye. In order to promote their growth, a drop of vinegar may be ſometimes poured on the paſte, by which means they will be preſerved throughout the whole year. They may be ſingly applied to the microſcope on a ſingle talc or iſinglaſs, a ſmall drop of water being previouſly put on it, that the animalcule may ſwim therein; and then the internal motion of it's bowels may be plainly perceived.

On cutting one of theſe Paſte-Eels acroſs the middle, a long and ſlender tube may be obſerved to ſhoot out from each of the divided ends, and a number of ſeeming ova iſſue from this; but theſe, on being more minutely inſpected, will appear to be

be living Eels of different growths, all included in their proper membranes: ſome of them move but ſlowly; others coil and uncoil themſelves pretty briſkly; while the moſt mature are ſeen to make ſtrenuous efforts towards obtaining an enlargement from their enveloping membranes, and at length ſucceeding, to ſwim away like their parent animal. The tube extended each way, on dividing the body, is properly the uterus of the creature, which in the larger Eels is full of dark ſpots, being the embryo Eels; and theſe ſpots are again obſervable in the young ones as ſoon as they are produced.

EEL-POUT. The Engliſh name of the muſtella fluviatilis, a fiſh of the gadus kind, in the Artedian ſyſtem; and diſtinguiſhed from the others by the name of the bearded gadus with two fins on the back and jaws of equal lengths.

The Eel-Pout, which is caught in the Trent, and many other rivers of England, is in ſome places called the burbot, and eſteemed very delicate food. When full-grown, it is commonly about fourteen inches long, ſlender, and ſomewhat of the ſhape of the common eel; but too ſhort, in proportion to it's thickneſs, to be truly ſo. Like the eel alſo, it is very ſoft and ſlippery, and covered either with a ſlimy matter or extremely minute ſcales. The colour is that of the tench; the head is large and flat; the noſtrils are ſmall and round; and the jaws are beſet with very ſmall teeth, rough as a file to the touch; beſides which, there is a ſemicircular rugged ſpace in the palate. There are two fins on the back; and there is one on the belly which reaches from the anus to the tail. A ſmall beard riſes from the extremity of the lower jaw; there are two other beards between the noſtrils and the end of the ſnout; and the gills are ſeven in number.

There is another variety of Eel-Pouts, which Linnæus deſcribes as a ſpecies of blennii: they are viviparous, bringing forth two or three hundred young at a time a little after the depth of winter; and are very numerous in the River Eſk, in Yorkſhire; but their fleſh is not much eſteemed. See BLENNY, VIVIPAROUS.

EFT. An animal very common in England; called by ſome the newt, and the ſwift; and, by others, the common lizard. The Eft has an oval obtuſe ſnout; it's back is of a ruſty iron-colour; and it's feet, which have each five toes, are armed with very ſharp ſmall claws: that toe which correſponds with the fore-finger in the human race is the longeſt of all; and that which anſwers to the thumb is placed lower.

Great Britain affords ſeveral ſpecies of Efts; namely, the common land Eft, with a black ſpotted belly; the ſnake-like Eft, which frequents heaths; the ſmall brown land Eft; the yellow ſcaly land Eft; and the brown and black ſpotted water Eft: the two laſt of which are mentioned by Plot in his Hiſtory of Staffordſhire.

The land Eft, or, as it is frequently called by naturaliſts, the land ſalamander, has ſomething very remarkable in it's exterior coat: it's ſkin often appears dry, like that of the lizard; but it alſo frequently ſeems as if covered with a fine ſhining liquid varniſh, the change from one ſtate to the other being uſually performed in an inſtant; and it ſometimes, on being barely touched, becomes entirely wet. There is alſo under the ſkin of this animal a ſort of milky liquor, which, on the body's being preſſed, is ſpouted out to a conſiderable diſtance: the paſſages for the eſcape of this fluid are a vaſt number of pores or holes, many of which are perceptible to the naked eye; and probably the firſt-mentioned liquor, which covers the ſkin in the manner of a varniſh, may be the ſame with this, it's white colour not being diſtinguiſhable when thinly ſpread over the creature's body. This milky ſubſtance bears a ſtrong reſemblance to the juice which the tithymals, and many other ſucculent plants, afford when either cut or broken; it's taſte is intolerably acrid and ſtyptic; and though the tongue receives no injury from touching it, the ſenſation is nevertheleſs ſo violent, that the perſon affected is very apt to dread the conſequences.

An opinion generally prevails, that this animal is of a poiſonous nature; and the fabulous ſalamander of the ancients ſeems to be of the ſame genus, if not the ſame animal. Maupertuis, in order to convince mankind of the truth of theſe remarkable particulars, cauſed a large number of Efts to be collected; which the country people, who had caught them near the bottoms of old walls, handled with as much caution as if they had been vipers. From this, as well as other experiments, it appears very evident, that the ſtories of the Eft's being a poiſonous animal are as vague and groundleſs as thoſe of it's being able to exiſt in the fire. Some remarkable circumſtances, however, the above gentleman obſerved in his diſſection of theſe animals; namely, that in ſeveral of the females there were at the ſame time cluſters of eggs and young ones in an animated ſtate; that theſe eggs formed bunches reſembling thoſe of the ovaries of birds; that the young were contained in two tubes, the coats of which were perfectly tranſparent; and that in one female only he counted fifty-four young, all living and vigorous.

The water Eft furniſhes the curious with excellent opportunities of obſerving the circulation of the blood by means of the ſolar microſcope. By the help of this inſtrument, the veſſels are perceived to be beautifully delineated on the ſkin; and the tide of blood in the large ones to be equal to that of the ſtream of water which, in hydroſtatical experiments, is ejected out of a veſſel by condenſed air. In either of theſe caſes, no appearance of drops of ſeparate globules can be diſcerned, but the whole forms one continuous body. In the leſſer veſſels, theſe little globes are obſerved to paſs along very ſwiftly, but evidently to ſeparate from each other.

It is very remarkable, that in the tail of this animal there ſeems to be a greater number of veſſels than are immediately neceſſary for the circulation of the blood; for, when thus examined, there will often appear two parallel veſſels, in one of which only the circulation is performed, and this ſucceſſively in one and the other of the veſſels, the tide often leaving the one wholly empty which had juſt before been full and circulating in the other.

In the ſtomachs of a certain ſpecies of water Efts found in Brazil, Mexico, and Cuba, particular ſubſtances called Eft-ſtones, ſuppoſed to be endowed with extraordinary virtues, like the bezoars in other animals, are ſaid to be lodged: but though theſe ſtones are celebrated by Ximenes, and other authors who have been on the ſpot, and have had every opportunity of ſearching into the reality of their origin, many ſtill doubt whether any ſuch ſubſtances were ever actually found in theſe animals. Redi ſuppoſes them to have been once the teeth, or ſome other parts, of fiſhes dug out of the earth; and he obſerves that, having tried ſome which bore that name, he found no viſible effect in any of them.

EGG, POACHED. A curious ſpecies of ſhell of the ſemiporcellanæ genus, or ſhells reſembling cypræ or cowries.

EGG, SEA. An appellation frequently given to the echinus marinus, or ſea-urchin. See Echinus Marinus.

EGRET; the Ardea Garretta of Linnæus. This very beautiful bird, to which ſome naturaliſts give the name of the leſſer white heron, is now but rarely ſeen in England: though it appears from unqueſtionable evidence, that Egrets were formerly very numerous; for, in a bill of fare at the famous feaſt of Archbiſhop Nevill, mention is made of no leſs than one thouſand of them. Perhaps the great eſteem in which they were held at that period, may have occaſioned their extirpation in this iſland; but they are ſtill very common in the ſouthern parts of Europe, where they frequently appear in numerous flocks.

The Egret meaſures about twenty-four inches in length, and weighs about a pound. The bill is black and ſlender; the ſpace about the eyes is naked, and green; the irides are of a pale yellow colour; and the head is adorned with a beautiful creſt, compoſed of ſome ſhort feathers, and two long ones hanging backwards, which are upwards of four inches in length. The whole plumage is of a reſplendent whiteneſs; the feathers on the breaſt and the ſcapulars, which are extremely delicate, long, ſlender, and unwebbed, hang in the lighteſt and looſeſt manner imaginable; and the legs are a dark green almoſt approaching to black. The ſcapulars and the creſt were formerly much eſteemed as ornaments for caps and head-pieces: hence the Aigrette and Egret came to ſignify an Ornament for a Cap; though, according to the etymology of Belonius, the word was originally derived from Aigre de l' Aigreur de ſa Voix.

EINBLINDER. The name of a ſpecies of blind lamprey, called by naturaliſts lampetra cæca. It is very ſmall, not exceeding the common dew-worm either in length or thickneſs. It is alſo deſtitute of ſcales; but the body is divided by annular lines into no fewer than eighty-four-rings. The mouth, which is ſituated in the under-part of the head, is round, and always open; in the middle of the head there is a cavity, as uſual in the lamprey kind, for the admiſſion of water; and on each ſide there are ſeven gill-holes. This animal has only one long fin, which runs along the ridge of it's back.

ELAPHOCAMELUS. A term by which ſeveral authors expreſs the Peruvian camel, uſually called the llama, and employed in that country as a beaſt of burden.

ELAPS. A name ſometimes given to the elops, a remarkable kind of ſerpent found in the Iſle of Lemnos. See Elops.

ELATER. A genus of inſects of the order of coleoptera, having ſetaceous antennæ; which, when laid on their backs, enable them to leap with great force and agility: and from this circumſtance they receive their name. There are various ſpecies of theſe four-winged flies, diſtinguiſhed by their different colours.

Elater, Mixed Brown, Green, and Brassy. This ſpecies is ſmall, and of an oblong ſhape; the breaſt and caſes of the wings of the male are very bright, ſtrongly tinged with green; and the antennæ are a little pectinated on their edges. The colour of the female is more yellow; the breaſt is broader and more gloſſy; and the feelers are without any pectination. This inſect uſually makes it's appearance in the month of June.

Elater, Black, Red-Breasted. This very minute inſect is entirely of a black colour, except ſome part of the breaſt, which is red, and deſcribes the figure of a creſcent, the horns of which are turned towards the head; and alſo the caſes of the wings, which have a blueiſh caſt. It is very common in paſture-grounds, and under hedges, near London.

Elater, Brownish Black. This ſpecies, which is pretty large, has an oblong body; the colour is a browniſh black throughout; the head is ſmall; and the caſes of the wings, which are ſmooth, exhibit ſomewhat of a gloſſy appearance.

Linnæus gives this inſect the name of the brown notopeda; and likewiſe makes mention of the Black Elater with a hairy breaſt; the Black Elater with a red breaſt, already deſcribed; and the Black Elater with red caſes to the wings.

Other zoologiſts enumerate the Greeniſh Braſs-coloured Elater with yellow wings; the Black Elater with blue caſes to the wings; the Black Elater with red wings on the back part; the Black Elater having the caſes of the wings livid on their exterior edges; the Red-breaſted Elater with red caſes to the wings; and the Black Elater with brown caſes to the wings, and the feelers and legs of a reddiſh brown colour.

ELAWANDUM. A remarkable ſpecies of monkey very common in the Iſle of Ceylon. It's hair is either whitiſh or of a pale grey colour; and it has a long beautiful black beard depending from it's chin.

ELDRIENE. An appellation given by ſome authors to the ſmall fiſh called in England the minnow; and by others varius, from the aſſemblage of different colours on it's ſides and belly.

ELECTRIC EEL. See Gymnotus.

ELECTRIC FISH. See Torpedo.

ELEPHANT. In the Linnæan ſyſtem of zoology, a diſtinct genus of the brutæ, in the claſs of mammalia; the diſtinguiſhing characters of which are, that it has no cutting-teeth; that the canine or dog-teeth of the upper jaw are exceedingly long; and that it has a very long flexible proboſcis, and a body almoſt naked.

The Elephant, which is the largeſt of all land animals, is no leſs remarkable for it's docility and underſtanding than for it's ſize. All hiſtorians are agreed that, next to man, the Elephant is the moſt ſagacious of all creatures; notwithſtanding which, were we to form our ideas of it's capacity from it's external appearance, we ſhould be induced to conceive a very mean opinion of it's abilities. It's huge body, covered with a callous hide, without hair; it's large miſhapen legs, which ſeem ſcarcely formed for motion; together with it's little eyes, large ears, and long trunk; all unite in giving it an air of extreme ſtupidity: but when we examine it's hiſtory, our prejudices baniſh; and, when we conſider the various advantages it derives from it's clumſy conformation, our ſurprize increaſes.

Though it is altogether impoſſible, by any deſcription, however elaborate, to convey an adequate idea to the reader of this vaſt animal, which is ſaid to grow from ſeven to fifteen feet high; it may in general be obſerved, that it has a long trunk, compoſed of multitudes of rings, pliant in every direction, and terminated by a ſingle moveable hook, which anſwers the purpoſe of a hand in conveying any ſubſtance to it's mouth. The forehead is very elevated;

elevated; the ears are long, broad, and pendulous; the eyes are extremely ſmall; the body is round and full; the back riſes in a kind of arch; and the legs are thick, clumſy, and ſhapeleſs. The hide, which is of a duſky colour, is furniſhed with only a few ſcattered hairs, but replete with ſcratches and ſcars acquired in it's paſſage through woods and thickets; the tail, like that of the hog, is terminated by a few long hairs of an extraordinary ſize; the feet are undivided, but the margins are incloſed by five round hoofs; and the whole animal is ſhort in proportion to it's height. The female is leſs than the male; and the udder hangs between the fore-legs.

Though the Elephant is the ſtrongeſt, as well as the largeſt, of all quadrupeds, in a ſtate of nature it is neither fierce nor formidable: pacific, mild, and brave, it never abuſes it's ſtrength, but exerts it either in it's own protection or that of the community. In it's native deſarts, it is ſeldom perceived alone, but appears to be a ſociable and friendly creature. The veteran of the company always conducts the band, that next in ſeniority bringing up the rear; the weak and the infirm are placed in the centre; while their offſpring are borne by the females, and prevented from falling by means of their trunks: however, this order is only maintained either during dangerous marches, or when theſe animals are deſirous of feeding in cultivated grounds. In foreſts and other ſolitudes, they move with leſs precaution, though without ever ſeparating, or even removing ſo far aſunder as to be incapable of lending each other any requiſite aſſiſtance.

Nothing hardly can be more formidable than a drove of Elephants, as they appear at a diſtance in an African landſcape: wherever they come, the foreſts ſeem to ſink beneath them; in their paſſage, they bear down the branches on which they feed; and if they enter an incloſure, in a very few minutes all the labours of agriculture are cut off and diſappear: ſuch invaſions are the more terrible, as they cannot be repelled; for an army of men would ſcarcely be adequate to the taſk of attacking their united numbers. Sometimes, however, it happens that one or two of them are found lingering behind the reſt; and againſt theſe only the power and ſtratagems of the hunters can be exerted with effect; for an attempt to moleſt the whole body would inevitably be fatal, as they ruſh directly forward on the perſon who offers to inſult them, ſtrike him with their tuſks, ſeize him with their trunks, toſs him into the air, and watching his fall, trample him to death. But they are thus dreadful only when incenſed, never offering any perſonal injury when ſuffered to feed unmoleſted. It is even ſaid that they retain a ſenſe of injuries received; and accordingly, when once provoked by man, they ſeek every future occaſion of revenge, ſmelling him with their long trunks at a diſtance, following him with all their ſpeed on the ſcent, and (though ſlow to appearance) ſoon overtaking and deſtroying him.

Elephants, in their natural ſtate, ſeem to delight in frequenting the banks of rivers and the deepeſt vallies, and in refreſhing themſelves in the moſt ſhady foreſts and wet ſituations. Indeed, they cannot exiſt at a great diſtance from the water, which they always diſturb before drinking. They often fill their trunks with this element, either for the purpoſe of cooling that organ, or of diverting themſelves with ſpurting it forth in the manner of a fountain. They ſeem to be equally affected by the extremes of heat and cold; and, in order to avoid the former, frequently take ſhelter in the moſt obſcure receſſes of foreſts, or plunge into the water, and ſwim from the continent to iſlands at the diſtance of ſeveral leagues from the ſhore.

Theſe creatures ſubſiſt chiefly on vegetables, and ſeem to entertain a perfect abhorrence for animal food. When any individual of their ſociety happens to diſcover a ſpot of good paſture, he invites his companions to partake of the repaſt; though it muſt be a very extenſive tract indeed that can furniſh proviſion for the whole band; and as their broad heavy feet ſink deep at every ſtep, and deſtroy much more paſturage than they themſelves devour, they are on that account frequently compelled to change their quarters, and even to migrate from one country to another. The Indians and negroes, who are often incommoded by theſe viſitants, endeavour to keep them at a diſtance by making loud noiſes, and kindling large fires contiguous to their cultivated grounds: but ſuch precautions do not always ſucceed; for troops of them often break through their fences, deſtroy their whole harveſt, and overturn their little habitations; and, when fully ſatiated, march back again to the woods in a very regular manner.

Such are the habits of the Elephant, conſidered in a ſocial light: but, if we regard it as an individual, we ſhall find it's powers ſtill more extraordinary; for, notwithſtanding it's very aukward and unpromiſing appearance, it poſſeſſes all it's ſenſes in great perfection, and is capable of applying them to more uſeful purpoſes than any other quadruped. This animal, as already obſerved, has very ſmall eyes, when compared to the enormous bulk of it's body; but, though their minuteneſs may at firſt ſight carry an appearance of deformity, when we examine them more cloſely, they exhibit a variety of expreſſion, and diſcover the various ſenſations with which the creature is actuated: it turns them with a pleaſing attention to it's maſter, ſeemingly as if to reflect and deliberate; and, as it's paſſions follow each other in ſlow ſucceſſion, their various workings are diſtinctly obſerved.

Nor is the Elephant leſs remarkable for it's quickneſs of hearing: it's ears, which are extremely large, even more bulky in proportion than thoſe of the aſs, are uſually dependent, but capable of being elevated and moved at pleaſure; and with them the animal wipes it's eyes, in order to repel the duſt and flies which would otherwiſe greatly incommode them. It appears to be exceedingly delighted with muſic; and very readily learns to beat time, to move in meaſure, and even with it's voice to accompany the drum and trumpet. This animal's ſenſe of ſmelling is not only very exquiſite, but is in a great meaſure adapted to the ſame odours which are grateful to mankind; for the creature gathers flowers with apparent pleaſure and attention, picking them up one by one; and afterwards unites them in a noſegay, ſeemingly charmed with their perfume. The orange-flower in particular appears to be peculiarly agreeable both to it's taſte and ſmell; for it ſtrips the tree of all it's verdure, and eats every part of it, even to the very branches: it alſo ſearches out the moſt odoriferous plants which grow in the meadows; and, with reſpect to the woods, it ſhews a predilection for the cocoa, the banana, the palm, and the ſago trees; the ſhoots of which being tender, and filled with pith, it not only devours the leaves and fruit, but alſo the trunk, and the entire plant to it's very root.

But

But as to the ſenſe of feeling, the Elephant exceeds the whole brute creation, and perhaps even man himſelf. The organ of this ſenſe lies ſolely in the trunk, an inſtrument peculiar to this animal, and which anſwers all the purpoſes of a hand: this trunk, properly ſpeaking, is only the ſnout extended to an unuſual length, hollow like a pipe, and terminating in two openings or noſtrils like thoſe of the hog. The trunk of an Elephant of the height of fourteen feet, is about eight feet in length, and five and a half in circumference at the mouth, where it is thickeſt; it is hollow throughout it's whole length, but has a partition which runs from one end to the other; ſo that, though it appears externally like a ſingle pipe, it is internally divided into two. This fleſhy tube is compoſed of nerves and muſcles, covered with a ſkin of a blackiſh colour, like that of the reſt of the body; it is capable either of extenſion or contraction, of being bent or ſtraightened; embracing any ſubſtance to which it is applied with the utmoſt pliancy; and yet ſo very ſtrong, that nothing can be torn from it's gripe. To aid the force of this graſp, there are ſeveral little eminences, like the feet of caterpillars, on the under-ſide of this inſtrument, which unqueſtionably contribute to the ſenſibility of the touch, as well as the firmneſs of the hold. Through this trunk the animal breathes, drinks, and ſmells, as by means of a tube; and, at it's very extremity, exactly above the noſtrils, there is an extenſion of the ſkin, about five inches long, which is ſhaped like a finger, and in fact anſwers all the purpoſes of that member; for, together with the reſt of the extremity of the trunk, it is capable of aſſuming different forms at pleaſure, and conſequently of being adapted to the minuteſt objects. By the help of this, the Elephant is enabled to pick up even a pin from the ground, to untie the knots of a rope, unlock a door, and write with a pen. 'I have ſeen,' ſays Ælian, 'an Elephant writing Roman characters on a board, in a very orderly manner, his keeper only ſhewing him the figure of each letter. While thus employed, the eyes might be obſerved ſtudiouſly caſt down on the writing, and exhibiting an appearance of great ſkill and erudition.' It ſometimes, indeed, happens, that the object proves too large for the graſp of the trunk; in which caſe, the Elephant makes uſe of another expedient as admirable as the former: it applies the extremity of it to the ſurface of the object; and ſucking up it's breath, lifts and ſuſtains whatever weight the air is capable of keeping ſuſpended. Thus this inſtrument is conducive to almoſt every purpoſe of the creature's life; it proves an organ of ſmelling, touching, and ſuction; and not only provides for the neceſſities and conveniencies of the animal, but alſo for it's ornament and defence.

But though the Elephant derives ſo many advantages from it's trunk, with reſpect to the reſt of it's conformation it is helpleſs and unwieldy: it's neck is ſo ſhort, and it's head turned with ſuch difficulty, that the animal muſt wheel round it's whole body before it can diſcover an enemy from behind. The hunters, who attack it from that quarter, generally eſcape the effects of it's indignation by this eaſy manœuvre, and gain time ſufficient to renew their aſſaults while it is employed in turning it's ponderous carcaſe in order to face them. It's legs, indeed, are not ſo inflexible as it's neck, though they are comparatively ſtiff, and will not bend without evident exertions: thoſe before ſeem longer than the hinder ones, but only to appearance, for, on being meaſured, they are found equal, if not ſhorter; their joints are placed nearly in the middle, like the knees of the human ſpecies; and the great bulk which they are deſtined by nature to ſupport makes their flexure very clumſy. While young, the Elephant bends it's legs, both to lie down and to riſe: but, when it either grows old or infirm, this act is not performed without human aſſiſtance; and conſequently it becomes ſo very inconvenient to the animal, that it rather chuſes to repoſe ſtanding. The feet which ſupport theſe maſſy columns form a baſe ſcarcely broader than the legs they ſuſtain; they are divided into five toes, which are ſituated beneath the ſkin, ſo that none of them appear to the eye, a kind of protuberances only being obſervable, which vary in number from three to five: but though the apparent toes vary, the internal ones are conſtantly the ſame; and the ſoal of the foot is furniſhed with a corneous ſkin, which compleatly inveſts the whole under-part of the foot.

In addition to the incumbrances of the Elephant, may be ſubjoined it's two enormous tuſks, which being uſeleſs for the buſineſs of maſtication, ſerve only as weapons of defence: theſe, as the animal advances in years, become ſo heavy, that it is ſometimes obliged to have holes dug in the walls of it's ſtall, for the purpoſe of reſting them, as well as eaſing itſelf of the fatigue of their ſupport. It is well known to what an amazing ſize theſe tuſks generally grow, many of them being above ſix feet in length. Some authors have ſuppoſed, that theſe are rather the horns than the teeth of this animal; but, beſides their greater ſimilitude to bone than horn, they have been indiſputably proved to grow from the upper jaw, and not from the frontal bones, as ſome have roundly aſſerted. It has been alſo affirmed, that theſe tuſks are ſhed in the ſame manner as ſtags drop their horns; but, from their ſolid conſiſtence, as well as accidental defects, which often appear to be the reſult of a ſlow decay, it is extremely probable that they are as fixed and permanent as the teeth of other animals. Certain, however, it is, that this creature never drops them in a ſtate of ſervitude, but retains them till they become cumbrous and inconvenient to a very high degree.

As to other parts of it's conformation, this animal is equally ſingular. The lips and tongues of other creatures ſerve to imbibe their drink or their food; but, with reſpect to the Elephant, they are totally unſerviceable for thoſe purpoſes; and it not only gathers it's aliment with it's trunk, but alſo ſupplies itſelf with water by the ſame means. When it eats hay in a domeſtic ſtate, it lays hold of a ſmall wiſp with it's trunk, turns and ſhapes it with that inſtrument for ſome time, then guides it to it's mouth, and afterwards chews it with it's grinding-teeth, which are exceedingly large. When this quantity is ſufficiently maſticated, it is ſwallowed, and never ruminated again, as is the caſe with cows or ſheep, the ſtomach and inteſtines of the Elephant bearing a ſtronger reſemblance to thoſe of the horſe. It's manner of drinking is equally extraordinary: it dips the end of it's trunk into the water, and thereby ſucks up as much at a time as fills that great fleſhy tube compleatly; then raiſing it's head, and turning the point into it's mouth, it drives it below the aperture of the windpipe. The trunk being in this poſition, and ſtill full of water, the creature blows ſtrongly into it at the other end, whereby that fluid is forced into the

the throat, down which it is heard to pour with a loud jingling noiſe. From this mode of receiving ſuction, ſome have been led into an opinion that the young Elephant ſucks the dam with it's trunk, and not with it's mouth; but this is a fact which no traveller has hitherto had an opportunity of aſcertaining.

The hide of the Elephant is as remarkable as any other part. It is not covered with hair, like the generality of quadrupeds, but is almoſt bare: a few briſtles, indeed, are ſcattered over the body; but in general the hide is dry, rough, and wrinkled, and reſembles more the bark of an old tree than the ſkin of an animal. This becomes thicker every year; and, by a gradual addition of ſubſtance, it at length contracts that diſorder well known by the name of the elephantiaſis, or Arabian leproſy; a diſeaſe to which man himſelf is obnoxious. For the prevention of this malady, the Indians rub the Elephant with oil, and frequently bathe it, in order to preſerve the pliancy of the ſkin. Beſides the inconveniences incident to this diſorder, others ariſe from the extreme ſenſibility of thoſe parts which are not wholly callous: on theſe flies ſettle in prodigious numbers, and unceaſingly torment the animal; to repel which, it exerts every art in it's power, uſing not only it's tail and trunk in the natural manner, but even laying hold of the branches of trees, in order to beat them off; and, when theſe expedients fail, it often gathers up the duſt with it's trunk, and ſpreads it over the ſenſible parts.

Water ſeems as neceſſary to this animal as food itſelf. When in a ſtate of nature, the Elephant ſeldom quits the banks of rivers, and often immerſes itſelf in the water as high as it's belly. In a ſtate of ſervitude, the Indians are particularly careful to provide the creature with a proper ſupply of that element; they waſh it with great addreſs; afford it every convenience for aſſiſting itſelf; and, after ſmoothing it's ſkin with a pumice-ſtone, rub in oils, eſſences, and odours.

Conſidering the ſtrength, ſagacity, and obedience, of this animal, and the various beneficial purpoſes which it is deſtined to fulfil, it is by no means ſurprizing that it ſhould be taken into the ſervice of man: accordingly, we find that this creature, from time immemorial, has been employed either for the purpoſes of war, labour, or oſtentation; to increaſe the grandeur of oriental monarchs, or to extend their dominions.

Hitherto we have conſidered the Elephant in it's natural ſtate: but we ſhall now regard it in a different point of view; namely, as taken from the foreſt, and reduced to the ſervice of man. We are to behold this brave, but harmleſs quadruped, learning the arts of mankind, and inſtructed by him in all the horrors of war, maſſacre, and devaſtation; and to obſerve this half-reaſoning animal led into the field of battle, and wondering at thoſe tumults, and that martial fervour, which it is itſelf taught to increaſe.

The Elephant is an inhabitant of Africa and Aſia only; and, in moſt parts of the former, it ſtill retains it's native liberty. The ſavages of that quarter of the world, inſtead of attempting to ſubdue this powerful creature to their neceſſities, are happy in being able to protect themſelves from the effects of it's fury. Formerly, indeed, while the Carthaginian empire was in it's ſplendor, Elephants were employed in war: but this was only a tranſitory gleam of human power in that diviſion of the globe; the natives of Africa have long ſince degenerated, and the Elephant is at preſent only known among them by it's frequent devaſtations. However, no Elephants are even now found on this ſide of Mount Atlas; though beyond the River Senegal, and in the internal parts of the country, they are prodigiouſly numerous. In theſe extenſive and unpeopled regions, they ſeem, in conjunction with other wild beaſts, to maintain an undiſturbed dominion: they appear to be but little apprehenſive of man; and, ſeemingly ſenſible of his impotence and their own power, they often ravage his little labours, and treat him with the ſame haughty diſdain as they do other animals.

But though Elephants are moſt numerous in Africa, the largeſt are found in Aſia, where they are alſo rendered ſubſervient to human controul. In Africa, the talleſt do not exceed ten feet; while in Aſia they are found from ten to fifteen. Their price increaſes in proportion to their ſize; and, when they exceed a certain bulk, their value, like that of jewels, riſes as the fancy is inclined to eſtimate. The largeſt, which are generally deſtined for the ſervice of princes, are maintained at a very great expence. Their uſual colour, as already obſerved, is a duſky black, but ſome are ſaid to be white; and theſe, being reckoned ineſtimable, are appropriated to the ſole uſe of the monarch, attended on by the nobles, and almoſt adored by the people. Tachard aſſures us, that theſe white Elephants are larger than others; but ſome authors maintain that they are leſs; and, from their undoubted ſcarcity, others have even been induced to queſtion their exiſtence.

The European arts of deſtruction in war being little known in Aſia, there are but few eaſtern princes who do not maintain as many Elephants as their finances will admit; and on theſe animals they place their principal dependence during an engagement. For this purpoſe they are caught wild in their native foreſts, and tamed; for they never breed in a ſtate of ſervitude. It is a ſtriking peculiarity in the Elephant, that it's generative powers totally fail whenever it falls under the dominion of man, as if it were unwilling to propagate a race of ſlaves to increaſe the pride of the conqueror. Perhaps there is no other quadruped that refuſes to generate in it's own native climate, if indulged with a moderate ſhare of freedom; and it is well known that many will naturally copulate in every climate, and under every circumſtance. The Elephant alone has never propagated it's kind; and though it has for ages been ſubject to mankind, the duration of pregnancy in the female ſtill remains a ſecret. Ariſtotle, indeed, aſſerts that ſhe goes two years with young; that ſhe continues to ſuckle her offspring for three more; and that ſhe brings forth but one at a time: but this philoſopher gives us no account by which we can judge ſatisfactorily of the authenticity of his information. From authorities equally queſtionable we learn, that the little Elephant is about the ſize of the wild boar the inſtant it is produced; that it's tuſks are not then apparent; that at the age of ſix months it is as large as the ox, when it's tuſks are pretty conſpicuous; and that it continues in this manner, for near thirty years, advancing to maturity. Such information, however, is not ſupported by proper evidence: and of this we are fully aſſured; namely, that in order to recruit the great numbers which are annually deſtroyed in war, the princes of the eaſt are obliged to ranſack the foreſts, as well as to make uſe of various other expedients, for the attain-

ment of a freſh ſupply. Among all thoſe numerous bands, there is not an individual which has not been originally wild, nor one which has not been brought into a ſtate of ſubjection. Men themſelves are often glad to propagate a race of ſlaves who deſcend in this wretched ſtate through ſucceſſive generations; but the Elephant, when under ſubjection, is invariably ſterile: a circumſtance which may probably originate from phyſical cauſes as yet utterly unknown. In the mean time, the princes of India, having long vainly endeavoured to multiply the breed, have at laſt contented themſelves with ſeparating the males from the females, in order to prevent thoſe acceſſes of deſire which debilitate without multiplying the kind.

In order to catch Elephants wild in the woods, a ſpot of ground is ſelected, and ſurrounded by a ſtrong palliſade conſtructed with the thickeſt and ſtrongeſt trees, and ſtrengthened by tranſverſe bars, which impart a conſiderable degree of firmneſs to the whole. The poſts are fixed at ſuch convenient diſtances from each other, that a ſingle perſon cannot readily paſs between them; only one great paſſage being left open, through which an Elephant may eaſily enter, and ſo contrived as to ſhut of itſelf whenever the creature has got within the incloſure. In order to allure the animal into this toil, it is previouſly neceſſary to diſcover his retreat in the woods: this being effected, a tame female is conducted near the place, who utters the voice of deſire, as inſtructed by her keeper; which the male inſtantly anſwers, and haſtens to join her. On this the keeper obliges the female Elephant to retreat, ſtill repeating the ſame cry, till ſhe has allured the male into the incloſure; the door of which, as before obſerved, ſhuts ſpontaneouſly the moment he has entered. Still, however, the female advances, iterating her call; while the male purſues her through the incloſure, which gradually becomes narrower, till the unfortunate animal finds himſelf compleatly hemmed in, without the power of either advancing or retreating: the female, in the mean time, being liberated through a private door to which ſhe has been accuſtomed. The male Elephant, perceiving himſelf thus entrapped, endeavours to effect his eſcape; and, on the approach of the hunters, all his former deſires ſeem converted into rage: his enemies, however, find means to bind him with cords; and afterwards attempt to ſoften his indignation, by throwing water on him in great quantities, rubbing his body with leaves, and pouring oil into his ears. Soon afterwards two tame Elephants are introduced; a male and a female; who careſs the indignant animal with their trunks, while more water is thrown on him, as well to pacify as refreſh him. At laſt a tame animal, ſelected from among thoſe whoſe employment is to inſtruct freſh captives, is brought forward, and on whom an officer is mounted, for the purpoſe of inſpiring the priſoner with confidence. The hunters then open the incloſure; and, while this creature leads the captive along, two more Elephants are planted on each ſide, who ſoon compel him to ſubmit. He is then tied with cords to a maſſy pillar erected for that purpoſe, and ſuffered to remain in that ſituation one whole day and night. The day following he begins to be ſomewhat ſubmiſſive; and, by unwearied aſſiduity, in the ſpace of a fortnight he becomes as tractable as any of his companions.

The females are generally taken when following the males into theſe incloſures; and, very ſhortly after, are employed as decoys to others.

There are various other modes of catching Elephants, differing according to the abilities of the hunters. The negroes of Africa, who hunt them merely for their fleſh and tuſks, ſometimes take them in pit-falls; and, at others, purſue them through the defiles of mountains, where they cannot eaſily turn themſelves; and thus wound them from behind till they ſink through loſs of blood.

The Elephant, when tamed, is the moſt gentle and obedient of all animals. It ſoon diſcovers an attachment to it's keeper, careſſes him, obeys him, and ſeems to anticipate his deſires: it even comprehends the different tones of his voice, ſo as perfectly to diſtinguiſh between thoſe of command, anger, and approbation. All it's motions are regulated; and it's actions, which ſeem to correſpond with it's magnitude, are grave and majeſtic. It is quickly taught to kneel, in order to receive it's rider; it fondles thoſe with whom it is acquainted; ſalutes ſuch as it is ordered to diſtinguiſh; and with it's trunk, as with a hand, aſſiſts in taking up a part of it's load: it ſuffers itſelf to be arrayed in harneſs, ſeemingly exulting in the fineneſs of it's trappings; it draws either chariots, cannon, or ſhipping, with ſurprizing ſtrength and perſeverance, and even with apparent ſatisfaction, while it is not beat without a cauſe, and it's maſter ſeems to applaud it's exertions.

The conductor of the Elephant, who is uſually mounted on it's neck, guides it with an iron rod, ſometimes pointed, and at others bent like a hook; with this inſtrument it is ſpurred forwards when either ſlothful or diſobedient; but, in general, a ſingle word is ſufficient to put the gentle creature in motion after it is once acquainted with it's leader: and, indeed, this acquaintance is often abſolutely neceſſary; for the Elephant frequently conceives ſuch an affection for it's keeper, that it refuſes to obey the commands of any other perſon; and we are told that many of theſe animals have even died with grief, after having, in ſome ſudden fit of phrenzy, deſtroyed their owners. It has alſo been aſſerted, that one of them, which had been trained to draw the cannon of the French forces in India, was taught to expect a certain reward from it's conductor on the accompliſhment of ſome arduous and dangerous ſervice; but that, being once diſappointed in it's expectations, the enraged animal ſlew him: when his wife, who had been a ſpectator of the horrid ſcene, probably inſtigated either by madneſs or deſpair, immediately threw her two little ſons at the creature's feet; crying out that, ſince it had killed her huſband, it might alſo kill the infants. The Elephant, obſerving the babes in that ſituation, ſeemed to make a ſudden pauſe; and, moderating it's fury, lifted up the eldeſt of them with it's trunk; and, placing him on it's neck, thus adopted him for it's conductor, and ever after obeyed him with the moſt ſcrupulous punctuality.

Nor are Elephants ſerviceable only in the military art, and in drawing or carrying burdens; they are frequently introduced into the ranks, and compelled to fight in the moſt dangerous ſituations. Formerly, indeed, they were much more uſed in India than at preſent. About two centuries ago, the chief dependence of generals was placed on the number and experience of theſe animals; but ſince the greateſt part of mankind have adopted the uſe of more fatal though leſs formidable inſtruments of war, Elephants are very little uſed. The princes of India ſtill keep a few of them, either through

through oſtentation, or for the purpoſes of removing their ſeraglios; but they are ſeldom oppoſed to fire-arms, as they then frequently turn on their leaders. Still, however, in thoſe remote parts of the eaſt, where war is carried on among the natives only, and where the European arts of deſtruction have not yet been introduced, as in Siam, Cochin-China, Tonquin, and Pegu, theſe animals are brought into the field, each armed before with coats of mail, and loaded on the back with a ſquare tower containing from five to ſeven combatants. On the neck ſits the conductor; who, goading the creature into the thickeſt ranks, prompts it to increaſe the devaſtation: wherever it advances, no power can withſtand it's fury; it levels multitudes by means of it's enormous bulk, flings ſome of the antagoniſts into the air, and cruſhes others to death under it's feet. In the mean time, thoſe who are ſituated on the animal's back engage their enemies as from an eminence, diſcharging their weapons with double force, as the weight increaſes their velocity.

To men unacquainted with the modern arts of war, nothing can be more formidable or irreſiſtible than ſuch a moving machine: the Elephant, thus armed and conducted, raging in the midſt of a field of battle, inſpires more dread than even thoſe inſtruments which deſtroy at a diſtance, and are frequently moſt fatal when unſeen. This method of combating, however, is more awful than effectual; and poliſhed nations have ever prevailed over thoſe barbarous troops which have either called in the aſſiſtance of the Elephant, or attempted to gain the victory merely by a terrific diſplay. The Romans quickly learned the art of opening their ranks, in order to admit the Elephant; and, thus cutting it off from all aſſiſtance, quickly compelled it's leaders to calm the animal's fury, and to ſubmit. It ſometimes alſo happened, that the creature became impatient of controul; and, inſtead of aſſiſting, deſtroyed it's conductors. In either caſe, there was great preparation to very little effect; for a ſingle Elephant is known to require as much daily ſuſtenance as is ſufficient for forty men.

At preſent, indeed, the Elephant is principally uſed as a beaſt of burden throughout the whole peninſula of India; and for this employment no animal in nature can be better adapted. It's ſtrength being equal to it's bulk, it is capable of drawing with facility what ſix horſes are unable even to move; it can readily carry on it's back three or four thouſand weight; on it's tuſks alone it can ſupport near one thouſand; and it's force may alſo be eſtimated from the velocity of it's motion when compared to the magnitude of it's body. It's ordinary pace is as quick as that of the horſe on an eaſy trot; and, when puſhed, it moves as ſwiftly as that animal at full gallop. It can accompliſh a journey of fifty or ſixty miles in one day with great eaſe; and, when hard preſſed, almoſt double that number. It's trot is uſually heard at a great diſtance; and the creature may be eaſily traced, it's impreſſions on the ground being very deep, and nearly eighteen inches in diameter.

In India, Elephants are alſo deputed to very diſagreeable offices; for, in the courts of the more barbarous princes, they are uſed as executioners: which horrid taſks they perform with great dexterity; breaking every bone of a criminal with their trunks, trampling him to death, or impaling him on their enormous tuſks, according to the will of the inhuman commanders. But in theſe offices the Elephant is merely the ſervant of a cruel maſter, and not a voluntary tyrant; ſince no animal of the foreſt is naturally more benevolent and gentle: equally mindful of benefits; and ſenſible of neglect, it contracts a friendſhip for it's benefactors, and obeys them even beyond the extent of it's natural ſtrength.

As a particular inſtance of the aſtoniſhing power, as well as ſenſibility, of the Elephant, we are informed that, on the launching of a very large veſſel in India, a tame one was directed to force it into the water, when the taſk proved ſuperior to the animal's ſtrength, in ſpite of it's utmoſt exertions. The keeper, however, affecting to deſpiſe the poor creature's beſt endeavours, cried out, 'Take away 'that lazy beaſt, and bring another better qualified 'for ſervice!' when the Elephant inſtantly redoubling it's efforts, fractured it's ſkull, and died on the ſpot.

The following anecdotes, as they are derived from the beſt authorities, may perhaps ſerve to elucidate the peculiar qualities and diſpoſitions of this very ſingular quadruped.

In the city of Delhi, an Elephant paſſing along the ſtreets, put it's trunk into a taylor's ſhop, where ſeveral people were at work. One of the men, either for the ſake of amuſement, or from motives of brutality, pricked the animal's trunk with his needle, and ſeemed to entertain himſelf exceedingly with this pitiful atchievement. The Elephant, however, paſſed on without betraying any ſigns of immediate reſentment; but, coming to a dirty puddle, filled it's trunk with part of the contents, returned to the charge, and ſpurting the foul water all over the finery on which the taylors were employed, thus amply revenged the inſult.

In Adſmeer, an Elephant which frequently paſſed through the public bazar, as it approached a certain herb-woman, had always received from her hands a mouthful of greens. Being one day ſeized with a periodical fit of madneſs, the animal inſtantly broke it's fetters; and, running through the market, put the whole crowd of buyers and ſellers to flight, among whom was his old benefactreſs, who had, in her haſte, left her little child at the ſtall: but the animal, ſuddenly recollecting the ſpot where ſhe was accuſtomed to ſit, lifted up the infant gently with it's trunk, and conveyed it to a place of ſecurity.

At the Cape of Good Hope, where it is cuſtomary to hunt Elephants for the ſake of their teeth; and, where three horſemen well mounted, and armed with lances, uſually attack one of theſe animals alternately, each relieving the other till the creature becomes their prey; three Dutchmen, who were brothers, and who had acquired large fortunes by this occupation, determined to retire to their native country, in order to enjoy the fruits of their labours; but wiſhed, before they put their deſign in execution, to amuſe themſelves with a final chace. They accordingly ſet forwards; and, ſoon meeting with an object, began the attack in their uſual manner: in the interim, one of their horſes happening unfortunately to fall, thus diſmounted his rider; which the enraged Elephant inſtantly perceiving, ſeized the unhappy huntſman, toſſed him to a vaſt height in the air, and received the falling victim on one of it's tuſks. Then turning towards the other two brothers, with an aſpect expreſſive of revenge and inſult,

ſult, held out to them the impaled victim, writhing in the agonies of death.

Indeed, the teeth of the Elephant are productive of almoſt all the enmity which ſubſiſts between that animal and the human race; but whether they are ſhed annually, as in the deer kind, is a matter of uncertainty. However, the natives of Africa, from whom we receive the greateſt part of our ivory, aſſure us that they generally find it in their foreſts; and that the teeth of an Elephant would by no means prove a ſufficient recompence for their trouble and hazard in killing it.

The teeth of theſe animals are alſo very frequently met with in a foſſile ſtate; and, ſome years ſince, two great grinding teeth, and part of the tuſk of an Elephant, were diſcovered in a lead mine, in Flintſhire, at the depth of forty-two yards. The tuſks of the mammouth, ſo often found foſſile in Siberia, and which are converted to the purpoſes of ivory, are generally ſuppoſed to belong to the Elephant. However, the animal which produces them muſt have been formerly much larger in that country than it is at preſent, as thoſe tuſks frequently weigh four hundred pounds; while ſuch of them as are imported from Africa ſeldom exceed two hundred and fifty.

The American Elephants are animals known only in a foſſile ſtate. Several enormous ſkeletons have lately been diſcovered, at the depth of five or ſix feet beneath the ſurface of the earth, on the banks of the Ohio, which are ſeven hundred miles from the ſea-coaſt. Some of the tuſks were near ſeven feet in length, one foot nine inches in circumference at their baſes, and one foot near their extremities; the cavities at their baſes being nineteen inches deep. Beſides their ſize, there are other eſſential differences: the tuſks of the true Elephant have ſometimes a very ſlight lateral bend; as well as a larger twiſt, or ſpiral curve, towards their ſmaller ends. But the great and ſpecific difference conſiſts in the ſhape of the grinding-teeth; which, in thoſe newly found, were faſhioned like the grinders of a carnivorous animal, and furniſhed with a double row of high and conic proceſſes, as if intended for maſticating, and not for grinding their food; whereas thoſe of the modern Elephant are flat, and ribbed tranſverſely on their ſurfaces. A third variation is conſpicuous in the thigh-bone, which is of a very diſproportionable thickneſs to that of the Elephant, and has beſides ſome other anatomical variations. Theſe foſſile bones have alſo been found in Peru and the Brazils; and, when cut and poliſhed by ivory-workers, appeared in every reſpect to correſpond. However, Dr. Hunter is of opinion, that they muſt have belonged to an animal larger even than the Elephant, and differing from it in being carnivorous: but as yet this formidable creature has eluded every ſearch; and if ſuch an animal really exiſts, it moſt probably inhabits ſome of the remote parts of the vaſt new continent as yet unexplored by Europeans.

It is ſaid that the Elephant, on account of it's longevity, repreſents the ſymbol of Eternity. On a medal of the Emperor Philip, Eternity is repreſented by that animal, on which a little Boy is mounted, holding arrows in his hand: and, in the kingdom of Bengal, in the Eaſt Indies, the white Elephant is worſhipped as a divinity.

ELEPHANT, CATERPILLAR. An appellation given by ſome authors to a ſpecies of inſect commonly known in Ireland by the name of the Connaught worm, and ſuppoſed to be fatal to ſuch animals as accidentally eat it.

ELEPHANT, SEA. A name ſometimes given to the hippopotamus.

ELEPHANT, TRUNK-FISH, or ELEPHANT's NOSE. A ſpecies of the acus or needle-fiſh caught in the Eaſt Indies; ſo called from the reſemblance of it's ſnout to the trunk of the Elephant. The lower jaw of this very ſingular creature projects into a long and ſharp-pointed ſpine; the body is round and beautifully variegated with ſpots; and a green line runs on each ſide from the head to the tail. The fleſh of this creature taſtes much like that of the ſmelt.

ELK. An animal of the cervus or ſtag kind; which has been ſo variouſly deſcribed by the ancients, and even by many of the moderns, that it is evident they either knew very little of it's nature, or elſe different writers have deſcribed diſtinct animals under the ſame name. Pliny tells us, that the Elk reſembles the horſe, but that it is diſtinguiſhed from it by the length of it's neck and the largeneſs of it's ears; Salinus ſays, that it is not unlike the mule; and both theſe authors add, that it's upper lip is ſo very large, that it cannot feed without moving backwards. Pliny, from report, affirms the ſame of the machlis, a Scandinavian animal. Some have compared the Elk to the goat, and others to the ſtag; and ſome repreſent it as being of a duſky-yellowiſh colour: Cæſar, in his Commentaries, ſays that it is variegated with ſpots; and Pauſanias informs us, that it reſembles the ſtag kind, but is like the camel with reſpect to the length of it's neck.

In the Linnæan ſyſtem, the Elk is a ſpecies of cervus or deer, with horns having ſhort beams ſpreading into large and broad palms; one ſide of which is plain, the exterior one being furniſhed with ſeveral ſharp ſnags. It has no brow antlers; and there is a ſmall excreſcence under the throat.

This animal is found in Europe, Aſia, and America; and, according to the beſt informed naturaliſts, is one and the ſame with the mooſe-deer. See DEER, MOOSE.

The term Elk is alſo frequently applied to the cygnus ferus, or wild ſwan. See SWAN, WILD.

ELOPS. An appellation common to the ſea-ſerpent. The body is ſlender; the head is large; and the fin which covers the gills is double, having thirty ſpines, and being armed externally with five bones reſembling teeth.

ELOPS is alſo the claſſical name of a fiſh much eſteemed among the Greeks, and conjectured to be the ſame with the accipenſer.

ELVERS. The name of a ſmall ſpecies of eels caught in ſeveral rivers of England, particularly the Severn; being, in reality, young conger-eels. They enter the rivers while they are ſmall; and, as they precede the ſhads, it is by ſome imagined that they ſupply them with food. About the month of April, when they quite ſwarm, they are taken in a kind of ſieves conſtructed with haircloth, and affixed to long poles. The fiſherman, who ſtands on the margin of the ſtream, throws in his net as far as he is able; and, inſtantly drawing it out again, finds multitudes of Elvers incloſed; and proceeding in this manner, during the continuance of the tide, frequently takes as many as will fill a buſhel. They are eſteemed very delicate food.

EMBER GOOSE; the Colymbus Ember of Linnæus. A ſpecies of diver which inhabits the ſeas about the Orknies, but in very ſevere winters migrates

migrates to the ſouthern parts of Great Britain. It ſpends ſo much of it's time in the water, that the more credulous are of opinion it never quits that element; and that it hatches it's young in a hole formed by nature for that purpoſe under it's wing.

The Ember Gooſe is ſuperior in ſize to the common one; the head is duſky; the back, the coverts of the wings, and the tail, are clouded with lighter and darker ſhades of the ſame hue; the primaries and the tail are black; the under ſide of the neck is ſpotted with duſky; the breaſt and belly are ſilvery; and the legs are black. The ſkin is ſo tough, that in ſome of the northern countries it is ſaid to anſwer all the purpoſes of leather.

EMBERIZA. An appellation, with the addition of the epithets White and Yellow, uſed to expreſs the bunting and the yellow-hammer. In the Linnæan ſyſtem, it conſtitutes a diſtinct genus of paſſeres, including a great number of ſpecies.

EMBRYO WORMS. Of theſe inſects, which are lodged in the bodies of viviparous two-winged flies, the arrangement is a matter of no ſmall curioſity. If one of them be accurately diſſected, the parts where the Embryo Worms are incloſed will plainly appear. This diſſection, which conſiſts in taking off the whole upper ſhell of the body from the lower, is eaſily performed with a pair of ſciſſars; and that part which covers the belly may be turned back on the corſelet, without diſturbing the internal members by the operation; when the form and arrangement of thoſe parts which contain the Embryo Worms in theſe will be found very different from the ſhape and order of thoſe which encircle the eggs in common flies.

EMPIS. A name ſometimes expreſſive of a large ſpecies of gnat found about rivers and ponds; and diſtinguiſhed from all other kinds by a white circle ſurrounding the middle of it's body.

EMU. An American bird, called by ſome authors the Oſtrich of the New World. It is but very little known; and thoſe naturaliſts who mention it ſeem rather deſirous of proving it's affinity to the oſtrich, than of deſcribing thoſe peculiarities which diſtinguiſh it from all others of the feathered creation.

Theſe birds are chiefly found in Guiana, on the banks of the Oroonoko, in the interior provinces of Brazil and Chili, and in the vaſt foreſts which border on the River Plata. Several other parts of America were once known to contain them; but as mankind have multiplied, thoſe large and timorous creatures have either fallen victims to their power, or retired from their vicinity.

The Emu, though not ſo large as the oſtrich, is the ſecond bird to it in magnitude, being by far the largeſt in the new continent. The head generally meaſures ſix feet from the ground; the legs are three feet long; and the thighs are nearly as thick as thoſe of a man. It has three toes, whereas the oſtrich has but two; the neck is long; the head is ſmall; and the bill is depreſſed like that of the oſtrich; but, in all other reſpects, it bears a ſtronger reſemblance to the caſſowary than to any other fowl. The ſhape of the body is roundiſh; the wings are ſhort, and entirely unſuitable for flight; and it has no tail. The back and rump are covered with long feathers, which fall backwards, and cover the anus; and theſe are grey on the back, and white on the belly. It moves with great velocity, and ſeems to derive aſſiſtance in it's progreſs from a kind of tubercle behind ſhaped like a heel, by which it treads very ſecurely. In it's courſe it uſes a very ſingular kind of action; namely, that of lifting up one wing, which it keeps elevated for a time, and afterwards the other. Whether this creature makes uſe of it's wing as a ſail in order to catch the wind, or as a rudder to direct it's courſe, remains yet to be aſcertained: however that may be, it runs with ſuch amazing ſwiftneſs, as generally to leave the fleeteſt dogs far behind it; and one of them, on finding itſelf ſurrounded by the hunters, is ſaid to have darted among the dogs with ſuch aſtoniſhing fury, that to avoid it's rage they inſtantly gave way, while the courageous animal eſcaped in ſafety to the mountains.

This bird being but very little known, travellers have given ſcope to their imaginations in deſcribing ſome of it's actions, which they are well aware cannot be eaſily contradicted. Nieremberg informs us, that it is very peculiar in it's mode of incubation: 'The male,' ſays he, 'compels twenty or thirty of the females to lay their eggs in one neſt; he then chaſes them away, and places himſelf on the eggs; however, he takes the ſingular precaution of laying two of the number aſide, on which he does not ſit. When the young ones come forth, theſe two eggs are addled; which the male having foreſeen, breaks one, and then another, on which multitudes of flies are ſeen to ſettle; and theſe ſupply the young brood with a ſufficiency of proviſion till they are capable of aſſiſting themſelves.' On the other hand, Wafer aſſerts, that he has found great quantities of the eggs of this animal on the deſart ſhores north of the River Plata, buried in the ſand in order to be hatched by the heat of the climate. But of this, as well as the preceding account, we are ſomewhat doubtful; and it is highly probable that the laſt of theſe naturaliſts ſaw only the eggs of the crocodile, which are unqueſtionably hatched in that manner.

When the young are firſt excluded, they appear to be very familiar, as they follow the firſt perſon they meet. 'I have been attended myſelf,' ſays Wafer, 'by many of theſe young oſtriches, which at firſt are extremely ſimple and harmleſs; but, as they grow older, they become more cunning and diſtruſtful, and run ſo ſwiftly that a greyhound cannot overtake them.'

Their fleſh is generally eſteemed proper for food, eſpecially when young; and, as they are naturally very tame, it would perhaps be no difficult matter to rear them in a domeſtic ſtate; eſpecially as their maintenance could not be expenſive, if, as Narborough ſays, they live entirely on graſs.

ENCHELIDES. A genus of animalcules containing the capillary eels found in peppermint, vinegar, and other fluids.

ENCHELUS. An appellation given by Ariſtotle, Appian, and all the Greek writers, to the eel.

ENCRASICOLUS, or the Anchovy. A ſmall ſea-fiſh of the harengiform kind, but deſtitute of the row of ſerrated ſcales on the belly. Theſe creatures are caught in prodigious numbers in the Mediterranean and ſome other ſeas; and are well known as a pickle in moſt nations of Europe. See ANCHOVY.

ENCRAULOS. An Ariſtotelian appellation for the anchovy.

ENCURECK. A venomous inſect found in Perſia, and ſuppoſed by ſome naturaliſts to be a ſpecies of tarantula. It neither ſtings nor bites, but lets fall it's poiſon like a drop of water, which

occaſions an almoſt intolerable pain for a conſiderable time; and afterwards ſuperinduces ſuch a profound ſleep, that nothing, it is ſaid, can awake the patient but the cruſhing one of thoſe creatures on the part affected: it is, however, aſſerted, that ſheep feed on theſe inſects without receiving the ſmalleſt injury.

EPERLAMUS. A name ſometimes given to the ſmelt on account of it's pearly colour.

EPERVIERS. The French appellation for that claſs of butterflies which conſtitutes the ſixth in Reaumur's diſtribution. Theſe inſects are diſtinguiſhed by their poiſing themſelves on their wings after the manner of kites and other birds of prey, and never ſettling on thoſe flowers from whence they derive their ſubſiſtence, but fluttering with a humming noiſe while they thruſt their trunks into the the cups of the flowers, and extract their juices.

EPHEMERA. A diſtinct genus of the order of neuroptera in the ſyſtem of Linnæus, diſtinguiſhed by two gibbous protuberances above the eyes, erect wings, and a briſtly tail. This celebrated naturaliſt enumerates eleven ſpecies of this claſs, diſcriminated by their different colours, and the number of hairs in their tails, ſome having two, and others three.

The Ephemera, or Day-fly, as it's name imports, though among the moſt minute of that kind of inſects, may be conſidered as one of the moſt curious objects in natural hiſtory. All the various ſpecies are produced from eggs, in the form of worms; from whence they change to their aurelia ſtate; and then adopt their laſt mutation, viz. into beautiful flies, of longer or ſhorter duration, according to their kinds.

The Ephemera, in it's fly ſtate, is a very elegant winged inſect, ſtrongly reſembling the butterfly both in it's ſize and ſhape; but it's wings are not covered with that kind of painted duſt with which thoſe of butterflies in general are adorned and rendered opake. The Day-fly has four wings, the uppermoſt being conſiderably the largeſt; and, when the creature is at reſt, it generally lays it's wings over each other on it's back. The body is long, and compoſed of ſix rings which are larger at their beginnings than near their extremities; and from thence a tail proceeds longer than all the reſt of the fly, conſiſting ſometimes of three threads of unequal lengths, and at others of two long and one ſhort. Before this beautiful form is acquired, the inſect muſt have undergone all the various tranſmutations of it's kind: but it's glory is exceedingly tranſient, for the hour of it's greateſt perfection is that of it's death; and it ſeems ſcarcely introduced to pleaſure when deſtined to reſign it's life.

The reptile that is to become a fly, and which is granted ſo long a term when compared to it's latter duration, is an inhabitant of the water, and in many particulars bears a ſtrong reſemblance to fiſhes. It is furniſhed with gills, by means of which it reſpires at the bottom; and poſſeſſes alſo the tapering ſhape of aquatic animals. It has, beſides, ſix ſcaly legs, which are affixed to their corſelet; the head is triangular; the eyes, which are placed forwards, may be diſtinguiſhed both by their largeneſs and colour; and the mouth is furniſhed with teeth.

As there are ſeveral ſpecies of Ephemera, their aurelia are conſequently of different hues, ſome being yellow, ſome brown, and others cream-coloured. Some of them likewiſe excavate cells at the bottom of the water, from which they never ſtir, but feed on the mud which compoſes the walls of their habitations in contented captivity: others, on the contrary, range about, dive from the ſurface to the bottom, ſwim between two waters, quit that element entirely in order to feed on plants by the river ſide, and then return to their native abodes for protection and ſecurity.

But though the reptile exiſts two, and ſometimes three years, throughout all that long duration it offers but little to excite curioſity: it's moſt ſtriking peculiarities command our attention during the ſhort interval of it's fly ſtate, into which are crouded the moſt important tranſactions of it's life. The peculiar ſign by which we may diſcover that this reptile will ſhortly change to a fly, conſiſts in a protuberance of the wings on the back; about that time the ſmooth and depreſſed form of the ſuperior part of the body is changed into a more ſwollen and round figure, ſo that the wings in ſome meaſure become perceptible through the external covering.

As but a very few ſpecies of theſe inſects are natives of England, the curioſity of the naturaliſt can only be ſufficiently indulged by walking, about ſunſet, along the banks of the Rhine, the Seine, or ſome other continental rivers in temperate climates; where, for the ſpace of about three days during the middle of ſummer, their numbers and aſſiduity are perfectly aſtoniſhing: the thickeſt deſcent of the flakes of ſnow in winter ſeems hardly to equal their numbers; the whole air appears as if animated by the new-born race; and the earth itſelf is almoſt entirely covered with their remains. The aureliæ, or reptile inſects, as yet beneath the ſurface of the water, wait only the approach of the evening, in order to commence their transformation; the more induſtrious diveſt themſelves of their exuviæ about eight o'clock, and the moſt tardy are transformed before nine. Nothing, indeed, ſeems to be effected with more facility than this laſt metamorphoſis; the aureliæ are no ſooner raiſed above the ſurface of the water, than their old ſheathing-ſkins burſt; from the cavities of which flies iſſue, whoſe wings inſtantly unfolding, bear them into the air. Millions of aureliæ aſcend in this manner to the top; and, inſtantly becoming flies, fill all the vicinity with their flutterings. But theſe ſportings are ſpeedily terminated; for the whole ſwarm, in the ſpace of two or three hours, falling to the ground, covers the earth, after the manner of deep ſnow, for ſeveral hundred yards on each ſide of the river.

The males and females, during their very limited exiſtence, are differently employed. The former, quite inactive, and apparently without deſires, ſeem only born to die: unlike the males of other inſects, they neither purſue the females, nor ſhew any averſion to them; and, after fluttering for an hour or two, drop down dead. But, with reſpect to the latter, the caſe is very different; for ſcarcely have they left the ſurface of the water, and dried their wings, when they haſten to drop their eggs back again; and theſe they depoſit according to their different ſituations, ſometimes on the water, and at others on the land.

But as this account may perhaps be unſatisfactory to the inquiſitive naturaliſt, who will probably enquire by what means theſe eggs are fecundated, as no copulation whatever appears to take place between the ſexes during their tranſitory excurſions in air; we ſhall anſwer his reaſonable enquiry by firſt laying

laying before him the opinion of the ingenious Swammerdam, who informs us, that they are impregnated, in the manner of fiſh-ſpawn, by the males, after being ejected by the females. But, beſides that this doctrine is exploded even from the hiſtory of fiſhes, it is certain that the males have not time to perform this operation, as the eggs drop to the bottom the inſtant they fall into the water. Reaumur, who is of a contrary opinion, admits that they copulate; but ſays, that the act bears a proportion in ſhortneſs to the ſmall duration of their lives; and conſequently muſt be ſo quickly accompliſhed, as to be ſcarcely perceptible. This, however, is at beſt but ſporting a theory; and it is probable, that as many inſects are known to breed without any impregnation from the males, ſo the Ephemera may probably be of the number. But though this branch of natural hiſtory is ſtill unauthenticated, certain it is that, of all inſects, this appears to be the moſt prolific. As it flutters on the ſuperficies of the water, two cluſters may be obſerved to iſſue from the extremity of it's body, each containing about three hundred and fifty eggs. Indeed, it would ſeem as if there was a neceſſity for ſuch a ſupply, as, in their reptile ſtate, theſe inſects conſtitute the favourite aliment of every kind of freſh-water fiſh. In vain do theſe animalcules form retreats at the bottoms of rivers, from which they ſeldom remove; various kinds of fiſh conſtantly diſturb their repoſe, and thin their numbers. For this reaſon fiſhermen diligently collect a ſufficient quantity of theſe inſects, as proving the moſt grateful bait; and thus turn the rapacity of the fiſh to their own deſtruction.

Though the ſhort ſpan of life preſcribed to the generality of theſe little animals does not exceed two or three hours, there are ſome ſpecies which exiſt for ſeveral days; and one in particular, after quitting the water, has a ſecond ſlough to caſt: theſe are often traced in the fields and woods at a conſiderable diſtance from that element, though they are more frequently obſerved in it's vicinity. They are alſo at times found adhering to walls and trees, frequently with their heads downward, without either changing their ſituations or poſſeſſing the ſmalleſt viſible motion. In this condition they wait for the moment of their liberation from the laſt ſurrounding incumbrance; and, having at laſt attained to a ſtate of perfection, ſpeedily die.

For a particular deſcription of ſome of the moſt curious Ephemera, ſee DAY-FLY.

EPOPS. A name given by ſome ancient writers to the bird called by modern ones upupa; in Engliſh, the hoopoe. See HOOPOE.

EPTACTIS. An appellation ſometimes given to a ſpecies of ſtar-fiſh of the aſtrophyte kind, whoſe rays or branches, on their firſt projection from the body, are only ſeven in number, but which in time diverge into many more.

EQUUS. The claſſical name of the horſe. See HORSE.

EQUUS MARINUS. An appellation given by ſome naturaliſts to an animal very different from the hippopotamus or river-horſe, and more uſually known under that of the morſe.

ERANDGAAS. A fowl of the gooſe kind, noticed by ſome authors, and by them deſcribed as being ſomewhat ſmaller than the common wild gooſe. The head grey; the neck adorned with a red ring; the breaſt, wings, and neck, grey; and the feet red. Ray ſeems to queſtion the reality of this account.

ERICA. An appellation given by ſome naturaliſts to the common herring, the chalcis of Ariſtotle.

ERINACEUS. See HEDGE-HOG.

ERINOPTERUS. See PRIVET-FLY.

ERMINE; the Muſtela Erminea of Linnæus. This animal, which is alſo called the Stoat, ſo greatly reſembles the weaſel in it's ſize and conformation, that many naturaliſts, and Linnæus among their number, have given but one deſcription of both.

The Ermine, however, differs from the weaſel in being nine inches long; whereas the latter ſeldom exceeds ſix. The tail of the ſtoat, which is always tipped with black, is longer in proportion than the body, and better covered with hair; and the edges of the ears, and extremities of the toes, are of a yellowiſh white hue. But though the colours of the Ermine and the weaſel are nearly alike, (being a lightiſh brown in ſummer and white in winter in the more northern parts of Europe) even then the weaſel may be eaſily diſtinguiſhed from the Ermine by the tip of the tail, which in the latter is always black.

The fur of the Ermine is well known to be one of the moſt valuable kinds hitherto diſcovered; but it is only in winter that it poſſeſſes it's proper colour and conſiſtence. During the ſummer ſeaſon, the Ermine, as before obſerved, is brown. And, indeed, this change of colour in the hair of quadrupeds in ſome meaſure prevails in all: the horſe, the cow, and the goat, evidently vary their hues in the beginning of ſummer, the old hair then falling off, and ſhorter ſupplying it's place, but generally of a darker and more gloſſy hue.

What in this our temperate climate obtains in a ſmall degree, prevails in a much greater in thoſe regions where the winters are long and very ſevere, and the ſummers ſhort, and yet intenſely hot. During theſe laſt ſeaſons, the animal diveſts itſelf of it's warm coat of fur, which would prove very inconvenient, and continues for two or three months in a ſtate ſomewhat reſembling that of the ordinary quadrupeds of milder climates. At the approach of winter, however, with the increaſe of the cold, the coat of hair ſeems to thicken in proportion: from being coarſe and ſhort, it lengthens and grows finer; while multitudes of ſmall hairs ſpringing up between the longer ones, thicken the fur to an extraordinary degree, and communicate to it all that warmth and ſoftneſs which is peculiar to hyperborean animals.

To preſent our readers with a philoſophical account of the cauſes of this remarkable warmth in the furs of northern quadrupeds, would perhaps be attended with ſome degree of difficulty. It may indeed be ſaid, that nature thus fits them for the climate; and, like an indulgent mother, when ſhe expoſes them to the rigours of an intemperate winter, ſupplies them with coverings proper for withſtanding them. But though this may be true, it does not amount to a phyſical demonſtration: however, it is obſervable with reſpect to quadrupeds, as well as the human ſpecies itſelf, that a thin meagre diet has a tendency to produce long hair; and that children who have been ſparingly fed, as well as famiſhed dogs and horſes, are generally more hairy than others whoſe aliment has been dealt out to them more plentifully. This may perhaps be aſſigned as one cogent reaſon why animals inhabiting the northern climates are, during the brumal ſeaſons, more hairy than thoſe of milder ones; for

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at thoſe periods the whole country is covered with deep ſnow, and the proviſions which the creatures are then able to procure are both ſcanty and precarious. The progreſſive fineneſs of the fur may alſo ariſe from the intenſeneſs of the cold, which contracting the pores of the ſkin, the hair of courſe aſſumes the ſhape and ſize of the apertures through which it grows, as wires are extended by being drawn through ſmaller orifices. But, leaving ſuch arguments to the inveſtigation of the curious, ſuffice it to remark, that all the animals of the arctic climates may be ſaid to poſſeſs their winter and ſummer garments, except near the poles, where the cold is always ſo very ſevere, and food ſo extremely ſcarce, that one unvarying colour univerſally diſtinguiſhes the quadruped inhabitants.

As Ermines are chiefly valuable when cloathed in their winter attire, we ſhall conſider them in that point of view. Daubenton, we are told, procured one of them covered with it's white winter fur, which he put into a cage, that he might obſerve the proceſs of moulting it's hair. He received it at the beginning of March: in a very ſhort time it began to ſhed it's coat, and a mixture of brown was obſerved to prevail among the white hairs; ſo that, by the ninth of that month, the head was almoſt entirely of a reddiſh brown hue. This colour ſeemed at firſt gradually to extend along the neck, and down the back, in a ſtripe half an inch in breadth; the fore-part of the legs then aſſumed the ſame colour; and a part of the head, the thighs, and the tail, changed laſt of all: but at the end of the ſame month, no white remained, except on the throat and belly, which in this ſpecies always retain that hue. However, he did not enjoy the ſatisfaction of ſeeing the animal reſume it's former whiteneſs, though he kept it upwards of two years; which circumſtance undoubtedly originated from it's confinement, the quantity of it's food, and the ſuperior clemency of a French to an arctic winter. During it's confinement, this animal always appeared wild and untractable, and even in a kind of violent agitation, except when aſleep, in which ſtate it often continued three parts of the day. The eyes of this very elegant little creature were ſprightly; it's phyſiognomy was pleaſant; it's motions were ſo ſwift, that the eye could not follow them; but it's ſmell was very rank and offenſive. It's aliment conſiſted of eggs and fleſh, but it uſually ſuffered both to become corrupted before it touched them. As ſome animals of the Ermine kind are known to be very fond of honey, it was accordingly ſet before this creature; which, after being deprived of other food for three or four days, eat of that ſubſtance, but died very ſhortly afterwards: a convincing proof of it's being a diſtinct ſpecies from either the pole-cat or the martin, which feed on honey with avidity, though they greatly reſemble the Ermine both in their ſhape and diſpoſition.

The furs of Ermines in the north of Europe and in Siberia conſtitute a valuable article of commerce; in which countries thoſe creatures are by far more numerous than in the temperate climates. In Siberia, they burrow in the fields, and are taken in traps baited with fleſh. In Norway, they are either ſhot with blunt arrows, or caught in ſnares: each of theſe ambuſhes is compoſed of two flat ſtones, one of them being propped up by means of a piece of wood, to which is faſtened a baited ſtring; ſo that whenever the animal attempts to pull it away, the ſtone drops, and cruſhes it to death.

The Ermine is ſometimes found white in Great Britain, and is then called the white weaſel. It's fur, however, is of very little value, poſſeſſing neither the thickneſs, cloſeneſs, nor whiteneſs, of thoſe which are imported from Siberia. Indeed, the hair of this creature in every country changes in a courſe of time; for, as much of it's beautiful whiteneſs is imparted to it by certain arts practiſed by furriers, ſo it's natural colour again returns, and it's former brightneſs can never be reſtored.

ERNE. An appellation given by ſome naturaliſts to the cinereous eagle. See EAGLE, CINEREOUS.

ERYTHRINUS. A fiſh called by ſome authors rubellio and travolino; and, by the Venetians, alboro, or arboro. It is but a ſmall ſpecies, ſomewhat reſembles the gilthead in ſhape, and is entirely of a pale red colour. The tail is forked; the noſe is ſharp; and the eyes, which are large, have ſilvery irides, and ſometimes a ſlight tinge of red intermixed with the white. The mouth is ſmall; the fore-teeth are broad, the hinder ones being rather tubercles than teeth; and the coverings of the gills are ſcaly. It has only one dorſal fin, the anterior rays or nerves of which are prickly, the other being ſoft and ſmooth to the touch.

ERYTHROCYANEUS. An appellation given by ſome authors to the red and blue maccaw, with a cuniform tail, and the ſides of the head naked and rough. See MACCAW.

ESCALLOPS. A family of bivalve ſhells; the eſſential character of which is a trigonal ſinus, and an elaſtic cartilage for it's hinge in the very centre of the top of the ſhell. The ſubordinate characters of Eſcallops conſiſt in their being eared, which indeed moſt authors have made their chief diſtinction; whereas there are other eared ſhells beſides Eſcallops, viz. the ſpondyles and margaritiferæ; and, vice verſa, there may be Eſcallops without ears. Another inferior character is that of the tops running into a perfect ſtraight line, and thence gradually widening to a round bottom.

The ſpecies in this family are very numerous; ſome of which are very curious and beautiful, namely, the ducal mantle; the compaſs, or ſole; the duck's foot, or coral; and ſome others.

It is perhaps worthy of remark, that the colours of the under ſhells of Eſcallops are always fainter than thoſe of the upper ones; and that the valves have ſometimes a different tinge, as may be obſerved in the compaſs, or ſole, which has one valve of a cheſnut brown, and the other milk white.

The generality of authors rank theſe ſhells as a particular family, and call them pectens. Gualtieri makes different genera of thoſe which have equal, and ſuch as have unequal valves; the former he calls pecten, the latter concha pectinata; and the Eſcallops with unequal or ſingle ears he terms pectunculi. Linnæus makes them a genus of oyſters, and has accordingly arranged them under that appellation in his three hundred and thirteenth genus.

It has been aſſerted by ſome naturaliſts, that Eſcallops move with ſuch amazing force, as ſometimes to bound out of the catcher in which they are incloſed; and that their manner of leaping, or raiſing themſelves up, conſiſts in forcing their under valves againſt thoſe ſubſtances on which they lie.

ESCH. A name given by Hildegard, and ſome others, to the fiſh called in England the grayling, or umber; and, by the generality of authors, thynnallus.

rallus. It is of the coregonous kind; and Artedi diſtinguiſhes it by the upper jaw being longeſt, and the back-fin containing twenty-three bones. In Germany it is called aſch; and, in Italy, temello.

ESOX. A genus of fiſhes of the claſs of abdominales in the Linnæan ſyſtem; the characters of which are, that they are of the malacopterygious kind; that the branchioſtege membrane contains from ſeven to twelve bones; that the body is oblong; and that the dorſal fin is ſmall, and placed near the tail. Linnæus enumerates nine ſpecies of this genus, and Artedi only three.

EWE. The female of the ſheep kind.

EXACTIS. An appellation given to a ſpecies of ſtar-fiſh of the more branchiferous kind.

EXOCÆTUS. A genus of fiſhes of the order of abdominales in the Linnæan ſyſtem; and, in the Artedian, of the malacopterygious or ſoft-finned kind. The characters are theſe: the branchioſtege membrane contains ten bones, four of which are broad, and covered by the opercula of the gills; the pectoral fins are very long; the dorſal fin is placed near the tail; and the ſcales are large. There are only two ſpecies of this genus.

EXORMISTOS. An ancient appellation for a ſpecies of the petromyzon, the lampetra fluviatilis, called in England the lampern. Artedi diſtinguiſhes this fiſh by the name of the petromyzon with only one ſeries of ſmall teeth in the verge of the mouth, and a few diminutive ones below. See MUSTELA, LAMPETRA, and PETROMYZON.

EXOS. A name given by Geſner and Rondeletius to the fiſh commonly called the huſo, or ichthyocollis piſcis. It is properly a ſpecies of the accipenſer; and is diſtinguiſhed from the common ſturgeon by being deſtitute of tubercles. See ACCIPENSER.

EXQUIMA. A kind of monkey, very common on the coaſt of Guinea. The hair on the back, which is of a reddiſh brown colour, appears as if ſinged, and is interſperſed with white ſpots; the belly and chin are entirely white, and from the latter depends a beautiful ſnow-white beard about the length of two fingers. When this animal is irritated, it draws back it's lips; and, expoſing it's teeth, ſhuts it's jaws very nimbly, and chatters remarkably loud. It is a very active creature, and ſubſiſts on fruits and roots.

Another ſpecies of this monkey is found in Guinea, of the ſame ſize as the former, and of a blackiſh brown colour on the greateſt part of the body; but the belly is a blueiſh grey, and the tail is ſomewhat tawny. The mouth and noſe are blue; the cheeks are adorned with a great number of yellow hairs cluſtered together like thoſe which compoſe the beard of the goat; and the legs and feet are wholly black. This is alſo a very ſprightly, ſportive animal.

There is likewiſe a third variety of the Exquima, but much ſmaller than either of the former. The colour of this creature is an admixture of brown, yellow, and grey: the head is ſmall; and it has neither tail nor beard.

EYE-SUCKER. A ſmall marine inſect, ſometimes found adhering by it's ſnout to the eye of the ſprat, from which circumſtance it receives it's name. It is about three inches in length, of which the head occupies one quarter. The body, which is ſomewhat thicker than a hog's briſtle, is of a lively green colour.

EYE, GOLDEN. See DUCK, GOLDEN-EYED.

F.

FABER. The claſſical appellation of the dorée.

FACETAMUS. A kind of lizard known at Rome and Naples by the name of the tarantula.

FAITIERE. A ſpecies of ſhell-fiſh ſo termed by the French on account of it's ſhape, which reſembles the roof of a houſe; and, by claſſical authors, called concha imbricata. This ſhell, which is of the bucardium or ox-heart kind, has ſeven longitudinal ribs and a great number of tranſverſe laminæ; ſo that it bears a ſtriking ſimilitude to the rafters and croſs-beams of a houſe.

FALCINELLUS. See FASCINELLUS.

FALCON. A diſtinct genus of birds of the hawk kind in the Linnæan ſyſtem; the characters of which are, that the bill is ſtrong and hooked; that the baſe is covered with a cere or naked ſkin; and that the head is feathered, and the tongue bifid.

Linnæus claſſes no leſs than thirty-two ſpecies under this genus; among which are the eagle, the buzzard, the hawk, and the lanner.

Falconry was once the favourite amuſement of our anceſtors; and perſons of rank ſeldom made their appearance without their hawks perched on their hands; which, in ancient paintings, are the criterions of nobility. Harold, one of the ancient kings of England, and who, before his elevation to the throne, went on a moſt important embaſſy into Normandy, is drawn in an old baſs-relief as embarking for that country with a bird on his fiſt and a dog under his arm; and, in an ancient picture of Henry VI. one of his courtiers is repreſented in the ſame attitude. In thoſe early times, it was thought ſufficient for the ſons of noblemen to wind the horn, and carry their hawks properly; the accompliſhments of literature being left to thoſe who had their fortunes to acquire. Indeed, this diverſion was in ſuch high eſteem among the nobility all over Europe, that Frederic, Emperor of Germany, did not think it beneath his dignity to write a treatiſe on that ſubject. The expences attendant on this ſport were very conſiderable. In the time of the old Welſh princes, the king's falconer was the fourth officer in the ſtate; but, notwithſtanding his honourable appointment, he was interdicted ſwallowing more than three draughts of beer daily from his horn, leſt being thereby intoxicated, he ſhould

neglect his duty. In the reign of James I. Sir Thomas Monſon paid one thouſand pounds for a caſt of hawks; and therefore it cannot appear at all ſurprizing that the laws were formerly ſo extremely rigorous in preſerving an amuſement which was carried to ſuch an extravagant pitch. By a ſtatute of Edward III. the ſtealing of a hawk was deemed felony; and the carrying away it's eggs, even from a perſon's own ground, was puniſhable with impriſonment for a year and a day, together with a mulct at the king's pleaſure. In the reign of Elizabeth, the term of confinement was reduced to three months; but the offender was condemned to remain in priſon till he could procure ſecurity for his good behaviour during the ſpace of ſeven years. The art of ſhooting, indeed, was but little practiſed in thoſe early times; and the hawk was then greatly valued, not only for affording much diverſion, but for furniſhing the tables of the opulent with delicacies which could not be obtained by any other means.

The generous breed of falcons, or hawks, which have been introduced into the ſervice of man, are diſtinguiſhed from all the others by the peculiar length of their wings, which reach almoſt as far as their tails: in theſe, the firſt quill of the wing is almoſt as long as the ſecond, and terminates in a point which begins to diminiſh about half an inch from it's extremity. Thus the noble breed are diſcriminated from the baſer race of kites, ſparrow-hawks, and buzzards, whoſe tails are longer than their wings, and in which the firſt feather of each wing is rounded at the extremity. In the generous race likewiſe, the ſecond feather of the wing is the longeſt; but, among kites, ſparrow-hawks, and buzzards, the fourth is the moſt extenſive.

The magnanimous kinds of Falcons are endowed with many natural powers, of which the ignoble are wholly deſtitute. From the ſuperior length of their wings, they are ſwifter in the purſuit of their game; from a confidence in their velocity, they are emboldened to attack it; and, from an innate generoſity, they contract an attachment to their feeders, and are conſequently more docile and tractable than birds of a baſer ſort.

In order to train up a Falcon to hunt for it's maſter, as well as to preſent him with ſuch game as is killed by it, no ſmall degree of ſkill and aſſiduity are requiſite. Numberleſs treatiſes have been written on this ſubject, which are now, as well as the ſport itſelf, almoſt conſigned to oblivion: indeed, to modern readers, works on ſuch a topic are perfectly unintelligible; for falconers uſed a language peculiar to themſelves, in which they converſed and wrote with a profeſſional pride. However, we ſhall briefly exhibit the moſt approved modes by which the Falcon may be brought to anſwer it's original deſtination.

The manager of this bird begins by clapping ſtraps on it's legs, called jeſſes; and to them are affixed rings bearing the owner's name, by means of which the Falcon may be recovered, if in danger of being loſt. To theſe rings are added little bells, which ſerve to notify the ſituation of the animal though inviſible to the eye. It is always carried on the fiſt, and obliged to refrain from ſleep; and, when it proves ſtubborn, or attempts to bite, it's head is immediately plunged into water. Thus, by hunger, watching, and fatigue, the Falcon is conſtrained to ſuffer it's head and eyes to be covered with a hood or cowl; which troubleſome buſineſs is frequently continued for three days and nights without much intermiſſion: however, at the expiration of that time, the neceſſities of the animal, together with it's privation of light, generally diveſt it of every idea of liberty, and bring down it's natural ferocity. It's maſter concludes that it is ſufficiently tamed, if it permits it's head to be covered without reſiſtance; and if, when uncovered, it ſeizes the meat laid before it with a degree of patient ſatisfaction. A repetition of theſe leſſons by degrees enſures ſucceſs. The wants of the Falcon being the chief principle of it's dependence, various methods are taken to increaſe it's hunger, particularly that of giving it little balls of flannel, which it ſwallows with avidity. Having thus excited the appetite, care is taken to ſatisfy it; and thus gratitude attaches the bird to the perſon who acts only as it's tormentor.

When the firſt inſtructions have proved ſucceſsful, and the Falcon diſcovers tokens of docility, it is conveyed to ſome confined place; it's head is uncovered; and by ſoothing it with food at different times, it is gradually taught to jump on it's maſter's hand, and to continue there; and, after being confirmed in this habit, it is then judged proper to acquaint the creature with the lure, which is only a ſtuffed figure of ſome bird the Falcon is deſtined to purſue, perhaps a heron, a pigeon, or a quail; and on this lure care is always taken to give the creature it's food. Indeed, it is neceſſary that the bird ſhould not only be familiarized to this, but alſo fond of it, and delicate in it's food when ſhewn it. As ſoon as the Falcon has alighted on this figure, and taſted the firſt morſel, ſome falconers take it away; but by ſuch practices there is ſome danger of intimidating the bird: therefore, whenever the creature attempts to fly, the ſureſt method is to ſeize it, and ſuffer the animal to feed at large; and this ſerves as a recompence for it's docility. The uſe of this lure conſiſts in flattering the Falcon back when it has mounted into the air, though this method does not at all times prove effectual; and, indeed, it is always proper to aſſiſt it by the voice and ſigns of it's maſter. When theſe leſſons have been pretty often repeated, it is then neceſſary to ſtudy the character of the bird; to addreſs it frequently, if it ſeems inattentive to the voice; to ſtint it in it's food when it does not come readily to the lure; to keep it awake if it is not ſufficiently familiar; and to cover it frequently with the hood if it is not fully reconciled to the deprivation of light. The freedom and docility of the Falcon being thus perfected in the field of inſtruction, it is then conveyed to ſome extenſive plain, but ſtill limited in it's motions by a ſtring about twenty yards in length; and being covered as before, the falconer calls it at the diſtance of ſeveral paces, at the ſame time ſhewing it the lure; on which it flies, and is permitted to take a large morſel of the food affixed to it: on the day following the lure is held up to the bird at a greater diſtance; and afterwards at the utmoſt length of the ſtring. The live game conſtitutes the next object of allurement, but either in a diſabled or tame ſtate, that the creature may conquer it with facility. The Falcon having ſeized it ſeveral times while confined by the ſtring, is then left entirely at liberty to purſue wild game: at that the Falcon flies with eagerneſs; and, having either ſeized or killed it, is brought back again by the voice and the lure.

This bird may be taught to fly at any game whatever;

whatever; but falconers have generally confined their attention to ſuch only as either yield them profit in the capture, or pleaſure in the purſuit. The hare, the partridge, and the quail, generally compenſate the trouble of taking them. But the chace of the heron, the kite, or the woodlark, affords the moſt agreeable diverſion: when theſe birds perceive themſelves in danger from the approach of the Falcon, they immediately mount upward, inſtead of flying, like moſt others, directly forward; and, while their eager purſuer endeavours to riſe above them, both parties gradually diminiſh to the view of the gazing ſpectators below till they are totally loſt in the clouds: but, deſcending ſhortly after, they are ſeen ſtruggling together, the one exerting every effort of rapacious attack, and the other making a deſperate defence. A period, however, is ſpeedily put to the unequal conflict; the Falcon always comes off victorious; and the other animals, being either killed or diſabled, become an eaſy prey.

As birds in general fly ſtraight forward, the ſportſman ſoon loſes ſight of the chace; and, beſides, is in danger of loſing his Falcon: they are therefore not much purſued when amuſement is the object. However, to a perſon who regards only the addreſs of the chace, the purſuit of the lark by a couple of merlins is one of the moſt delightful ſpectacles which this exerciſe is capable of affording; and conſiſts in beholding one of the merlins uſing every exertion in it's power in order to get the aſcendancy of the lark; while the other, hovering in a lower ſituation, waits the moſt favourable opportunity for ſeconding the efforts of it's companion: thus, while the one ſtoops to ſtrike it's prey, the other ſeizes it whenever it deſcends.

Such are the natural and acquired habits of theſe birds; which, of all others, poſſeſs the greateſt ſtrength and courage in proportion to their ſize. While the more ignoble Falcon tribe approach their prey ſideways, theſe, in their wild ſtate, dart perpendicularly on their game, and either devour it on the ſpot, or carry it off if not too ponderous to retard their flight. They are alſo at times ſeen to deſcend, in a ſtraight line, from an amazing height, and to dart on their prey with aſtoniſhing celerity.

The ſpecies of Falcons, properly ſo called, are the following.

Falcon, Gyr. This elegant ſpecies exceeds all others with reſpect to ſize, approaching nearly to that of the oſprey. The irides are duſky; the bill is yellow, and much hooked; the throat is pure white; and the whole plumage is of the ſame colour, except that it is marked with duſky lines, ſpots, or bars. On the head, breaſt, and belly, there are narrow duſky lines thinly ſcattered, and pointing downwards; the feathers of the back and wings are marked with black cordiform ſpots, and the middle ones of the tail with a few bars; the thighs are cloathed with long fine white feathers; and the legs are yellow, and feathered a little below the knees.

This bird is ſometimes found entirely white. It was in high eſtimation when falconry was more faſhionable than at preſent, and always uſed for the nobleſt game, ſuch as cranes and herons. The Gyr Falcon inhabits the northern parts of Scotland, and is at times ſeen in the vicinity of Aberdeen.

Falcon, Peregrine. The ſize of this bird is equal to that of the moor buzzard. The bill is ſhort, ſtrong, much hooked, armed near the end of the upper mandible with a very ſharp proceſs, blue at the baſe, and black at the point. The feathers on the forehead are whitiſh; the crown of the head is black intermixed with blue; and the hind part of the neck is black. The back, ſcapulars, and covers of the wings, are elegantly barred with deep black and blue; the quill-feathers are duſky, marked with elliptical tranſverſe white ſpots; the tail is barred with ſeveral duſky and blue ſtrokes; the throat is white; and the fore-parts of the neck and upper part of the breaſt are white tinged with yellow. The remainder of the breaſt, the belly, and thighs, are white inclining to grey, and croſſed with duſky ſtrokes pointed in the middle. The feathers of the tail are of equal lengths, and beautifully barred with blue and black; the legs are ſhort and yellow; and the toes are very long.

This ſpecies ſeems to vary. Loranzi, in deſcribing the male Peregrine Falcon, has made all his colours darker, and the head and upper part of the body almoſt black; and Pennant ſays he ſaw one that was ſhot in Hampſhire, the whole underſide of the body of which was a deep dirty yellow, but the black bars were the ſame as in that above deſcribed. It is probable, however, that this variation ariſes from the difference of ſex, or from age.

Peregrine Falcons breed among the rocks of Llandidno, in Caernarvonſhire; which have long been famous for producing a generous race, as appears by a letter extant in Gloddaeth library, from the Lord Treaſurer Burleigh to an anceſtor of Sir Roger Moſtyn, in which his lordſhip thanks him for a preſent of a fine caſt of hawks taken on theſe rocks, and which ſtill belong to the family. In the north of Scotland they are very common, and ſometimes trained to falconry by the few gentlemen there who ſtill delight in this amuſement. Their flight is inconceivably rapid; for one of them, which had been trained by a gentleman in Angusſhire, having eſcaped from him with two heavy bells appended to each foot, was killed, in leſs than two days afterwards, near Moſtyn in Flintſhire.

Falcon, Sacre. This ſpecies, which, except the Gyr Falcon, is the largeſt, has a remarkably big head, a ſhort blue beak, and a body longer in proportion than the reſt of the tribe. The head is grey, the crown being flattiſh; the eyes are large and black; the noſtrils are ſmall; and the back and breaſt are ſpotted with brown. The inſides of the thighs are white ſpotted with black; and the feet and legs are generally blue, though ſometimes whitiſh ſpotted with yellow.

Falcon, Mountain. This bird is about the ſize of the goſhawk, but the body is thicker. The head is roundiſh, except on the top, where it is a little depreſſed, and covered with cinereous feathers mixed with black; the beak, which is ſtrong, ſhort, and crooked, has a great number of fine ſlender feathers reſembling hairs riſing from it's baſe; the throat and part of the breaſt are ſpotted with aſh-colour; the body is generally of a brown dappled hue, reſembling ruſty iron, but ſometimes varying to blackiſh with ſmall lines of white; the thighs are cloathed with long black feathers; and the feet are of a duſky brown colour. The Mountain Falcon is very rapacious and intractable.

Falcon, Grey. The Grey Falcon is about the ſize of the raven. The bill is of a blueiſh colour, ſhort, ſtrong, and much hooked; the head is ſmall, and depreſſed on the top; the fore-part being a deep brown, and the hind white. The ſides of the head

head and throat are cream-coloured; the belly is white, with oblong black ſpots; and the hind part of the neck and the back are a deep grey. The wings are very long; and, when cloſed, reach beyond the tail: the firſt quill-feathers are black, with white tips; and the others are a blueiſh grey, having their inner webs irregularly ſpotted with white. The tail is long and cuniform; the two middle feathers of which are the longeſt, and plain, the reſt being ſpotted; and the legs are long, naked, and yellow.

FALCON, GENTLE. This ſpecies is of an elegant conformation, and ſomewhat larger than the goſhawk. The cere and legs are yellow; the irides are a dull white; the pupil is large, and of a full black hue; and the head is of a light ruſt-colour with oblong black ſpots. The whole under-ſide, from the chin to the tail, is white tinged with yellow, each feather being marked with cordiform duſky ſpots pointing downwards. The back is brown; the quill-feathers, which are duſky, are barred on their exterior webs with black, and on the lower parts of their interior ones with white. The coverts of the wings and the ſcapulars are brown, edged with ruſt-colour; and the wings reach only to one-half of the length of the tail. The tail itſelf is marked with four or five black bars, and the ſame number of cinereous ones, the firſt being edged both above and beneath with a line of dull white.

Great caution ſhould be obſerved in deſcribing hawks, no other birds being ſo liable to change their colours during the two or three firſt years of their lives; and a want of attention to this circumſtance has occaſioned their numbers to be greatly exaggerated: but the proper marks to be attended to, for the purpoſe of forming the characters of the ſpecies, are thoſe on the quill-feathers and the tail, which never vary. Writers on falconry have given various names to the ſame kinds in different periods of their lives, which naturaliſts have adopted, and deſcribed as diſtinct tribes; and even the accurate Ray has been ſo far miſled as to copy them. Though the Falcon, the Gentle Falcon, and the Haggard, are made diſtinct ſpecies, they in reality form but one; and for that reaſon we ſhall not trouble our readers with unneceſſary repetitions, which would only tend to perplex them.

FALCON, WHITE. The whole body of this bird is pure white, except a few faint yellow ſpots, which cannot be diſtinguiſhed but by a very nice inſpection; the wings, indeed, are perfectly white, without the leaſt mixture. The colour ſufficiently diſtinguiſhes this ſpecies from all other birds of the ſame kind.

FALCON, BARBARY. This ſprightly and majeſtic bird has a large black beak, and open yellow noſtrils. The eyes are of a dark hazel colour, encircled with yellow rings; the top of the head is of a pale aſh-colour, beautifully ſpotted with black; the feathers on the back, ſhoulders, and part of the wings, are nearly of the ſame hue, and equally ornamented with black ſpots; the breaſt, belly, and thighs, are yellowiſh, inclining to white, the upper part of the breaſt being a little ſhaded with blue. The wings are very long; and, when cloſed, reach almoſt to the end of the tail, which is blueiſh, with ſix or ſeven duſky-coloured ſtreaks running acroſs it. Part of the thighs, and the lower part of the belly, are marked with curious oblong red ſpots reſembling ermine; the legs and feet are yellow; and the claws are black.

FALCON, RED INDIAN, OR ALDROVANDUS. This naturaliſt poſſeſſed two of theſe birds, which he conjectured to be male and female. The top of the head of the female was depreſſed; the beak was cinereous, and the ſkin which covered it's baſe was yellow. From the exterior corner of the eye proceeded an oblong reddiſh ſpot; and the breaſt and under-part of the body were reddiſh interſperſed with a few cinereous ſpots. The male differed from the female only in being ſomewhat leſs, and in his colours being generally deeper.

FALCON, INDIAN CRESTED. This ſpecies is of the ſize of the goſhawk. The head is flat, black, and creſted; and the creſt, which is double, hangs down on the back part of the head. The neck is red; the breaſt and belly are black and white, being marked with alternate tranſverſe lines of thoſe colours; the irides are yellow; the beak is a very deep blue, or rather black, eſpecially near the point; and the baſe is covered with a yellow membrane. The legs are feathered down to the very feet, which are yellow, and armed with extremely black claws; the edges of the leſſer feathers of the wings are white; the tail is alternately ſtriped with white and aſh-coloured ſtreaks; and the other parts are blackiſh.

A bird of this ſpecies was imported into England in the reign of King Charles II. and was firſt deſcribed by Ray.

FALCONE. An appellation given by ſome authors to the milvus or flying-fiſh.

FALLOW-FINCH, or FALLOW-SMICH. A name ſometimes given to the oenanthe, more commonly called the wheat-ear, and by ſome authors octiflora.

FAREN. The Swediſh appellation for a fiſh peculiar to that country. It is of the genus of cyprini, and diſtinguiſhed by Artedi under the name of the yellow-eyed cyprinus with twenty-ſeven bones in the pinna ani.

FARIO. A term uſed to expreſs the ſalmon when about half-grown, after it has paſſed that ſtate in which it is called the ſalar, and before it has arrived at it's full growth.

FASCINELLUS. A bird ſo called by Geſner and Aldrovandus, bearing a ſtrong reſemblance to the heron kind. The head, neck, breaſt, back, belly, thighs, and rump, are of a tawny colour; in the middle of the back there is a darkiſh green ſpot; and the wings and tail are nearly of the ſame colour. The bill is blackiſh, very long, and hooked at the extremity; and the feet are of the ſame hue.

FATHER LASHER; the Cottus Scorpius of Linnæus. A fiſh of the cottus kind, called by Artedi the ſmooth cottus without ſcales; having ſeveral ſpines on the head, and the upper jaw being a little longer than the under. The head, which is very large, has a moſt formidable appearance, being armed with vaſt ſpines, by which the creature combats every enemy that attacks it, inflating it's cheeks and gill-covers to a prodigious ſize. The noſe, and the ſpace contiguous to the eyes, are furniſhed with ſhort ſharp ſpines; and the covers of the gills are terminated by ſome very long, ſtrong, and ſharp-pointed ones. The mouth, which is large, contains two rows of minute teeth; the roof being furniſhed with a triangular ſpot of ſmall ones. The back is much elevated; the belly is prominent; the lateral line is rough; but the reſt of the body is very ſmooth, tapering towards the tail. The firſt dorſal fin conſiſts of eight ſpiny rays,

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1. GENTLE FALCON. 2. GYR - FALCON. 3. SPOTTED FALCON. 4. PEREGRINE FALCON.

5. FATHER LASHER. 6. BRAZILIAN RED AND BLUE FINCH. 7. LONG - TAILED FINCH.

8. PAINTED FINCH.

Plate XLVI. Published as the Act directs, by Harrison & Co. Sept.r 3. 1785.

rays, and the ſecond of eleven ſoft ones; the pectoral fins, which are large, are made up of ſixteen rays, the ventral of three, and the anal of eight; and the tail, which is rounded at the extremity, is compoſed of twelve bifurcated rays. The colour of the body is a duſky brown, marbled with white, and ſometimes ſtained with red; the fins and tail are tranſparent; and the belly is a ſilvery white.

This fiſh, which ſeldom exceeds eight or nine inches in length, is ordinarily found on the rocky coaſts of this iſland, lurking under ſtones, where it ſometimes ſeizes a bait. It is very common in the Newfoundland ſeas, where it is called ſcalping; and alſo on the coaſt of Greenland, in which country it conſtitutes the principal food of the natives; and, when made into ſoup, it is ſaid to be both agreeable and wholeſome.

FAUSSE-CHENILLE. A large claſs of worms produced from the eggs of ſeveral ſpecies of four-winged flies, and ſo denominated by Reaumur and other naturaliſts. Theſe worms, with reſpect to their general ſhape, have ſo much the appearance of caterpillars, that they have led many writers on inſects into an opinion of their being really ſo. Their bodies, like thoſe of caterpillars, are long, and compoſed of ſeveral joints or rings; their ſkins are alſo of the ſame conſiſtence; and in many ſpecies theſe creatures are variegated with the moſt beautiful colours, diſpoſed after the ſame manner as thoſe of ſmooth caterpillars. Both theſe inſects have a great number of legs, of two kinds; ſome membranaceous, others ſcaly. The worm and the caterpillar have each ſix ſcaly legs; but the membranaceous ones are different in number, and alone ſufficient to conſtitute a diſtinction between them. The caterpillars never have more than ten of theſe; which, with the ſcaly ones, make ſixteen, the greateſt number of legs belonging to their kind: but the worms have always twelve legs at leaſt of the former kind; which, together with the ſix ſcaly ones, make the whole number eighteen; and many ſpecies have that number of membranaceous legs alone. The membranaceous legs of the worms differ alſo from thoſe of the genuine caterpillars, in wanting the hooks at their extremities, which thoſe of the latter have. Hence the legs alone afford a ſufficient baſis of diſtinction between the caterpillar and the Fauſſe-Chenille, or caterpillar-worm. But the ſhape of their heads affords a ſtill more obvious diſtinction; and by this they may always be known at firſt ſight: the heads of the various ſpecies of caterpillars are of ſeveral very different ſhapes; ſome are ſhort, others long; ſome are more or leſs depreſſed; and ſome terminate in a ſharp point; while others are diſtinguiſhed by a ſort of interſtice or diviſion in the back part. Such are the perceptible variations in the heads of the ſeveral kinds of genuine caterpillars: but thoſe of all the Fauſſe-Chenilles are of one ſhape, round and very convex, ſo that they appear as part of a ſmall ſphere. The mouths of theſe and the genuine caterpillars are wholly ſimilar; and the ſtigmata are placed in the ſame manner. However, the eyes of the two kinds again diſtinguiſh them; the Fauſſe-Chenille having only two, which are very large and prominent, and placed on each ſide of the head; whereas the caterpillar has five eyes on each ſide of it's head, placed in a circular direction, and too ſmall to be ſeen with the naked eye.

The Fauſſe-Chenilles likewiſe differ from the common caterpillars in their manner of remaining on the leaves of plants: the caterpillar is always extended at it's full length when feeding or at reſt; but the former, though it ſtretches it's body to it's full length when feeding always rolls it up into a ſpiral figure when at reſt, making ſeveral circular convolutions, of which the head is at the end of the outermoſt, and the tail at the very centre of the inner one. When ſeizing on their food, theſe inſects give themſelves various ſingular contortions; and it is a very whimſical ſight to obſerve a conſiderable number of thoſe kinds which live in ſocieties, attacking different portions of the ſame leaf at once, and each giving it's body a different direction at the ſame time.

This creature, when it finds the ſeaſon of it's transformation into the nymph ſtate approaching, begins to form a caſe in which it may undergo this change, and remain during the deſtined time, without being expoſed to external injuries. For this purpoſe, it ſpins a web of ſilk, ſhaped like a ſmall egg, which has nothing remarkable externally; but, when diſſected, it is found to be compoſed of two different ſubſtances: at leaſt, of two ſubſtances of very different mechaniſm, though the materials of both are the ſame. The exterior caſe is reticulated, and compoſed of very ſtrong threads woven into a looſe open net-work; but the interior one is formed of extremely fine threads, woven into ſuch a cloſe ſtuff that no loom can equal it's fabric. The outer ſtrong and coarſe web is evidently intended for the better defending and protecting the inſect from danger; and thoſe two diſtinct caſes barely adhering to one another, when the exterior one is ſeparated, the interior ſtill remains compleat. The ſtrength of the external ſhell is extremely requiſite, as well as the cloſe texture of the internal one, to defend the incloſed animal in the nymph ſtate from ſeveral devouring inſects. The ants, in particular, are very fond of theſe nymphs, and will hunt out the caſes wherever they are to be found.

The flies produced from theſe inſects are of that kind which are deſtitute of trunks, but are furniſhed with ſtrong teeth on each ſide of their heads, which cloſing in the middle of their mouths, are able to cut any ſubſtances to pieces which the animals have occaſion to penetrate. The firſt uſe of theſe teeth is to eat holes through the double webs, in which theſe creatures find themſelves incloſed at their birth. All the flies of this kind have a general reſemblance to each other, and may be traced to the ſame family, though very different in colour and other obvious characters. They appear a dull inactive race, having very little motion; their wings are always croſſed over their bodies, and form a ſort of raiſed coverings; they contain ſeveral prominences and cavities; and appear as if they had been imperfectly expanded at the time of their emerging from the nymph ſtate.

All the females of theſe flies are oviparous; and as their eggs muſt of neceſſity be lodged in cavities or niches made in the ſtalks or leaves of growing plants, nature has provided each of theſe creatures with two inſtruments deſtined ſolely for the purpoſe, and which are real ſaws made in the neateſt manner with extremely minute teeth. But notwithſtanding there are many different ſpecies of flies which have this ſort of inſtruments, and ſeveral of them are very frequent on one of the moſt common of all garden ſhrubs, namely, the roſe-tree; no author had obſerved theſe wonderful and elegant inſtruments till the time of Valliſnieri, who has de-

ſcribed and figured the weapons of a roſe-tree fly, produced from a falſe caterpillar of that ſhrub, with two rows of teeth, one on each ſide, in the manner of the ſaw belonging to the ſerra piſcis or ſaw-fiſh.

FAUX BOURDON. An appellation given by Reaumur and others to the bees uſually called drones in England.

FAUX PUCERON. A genus of inſects ſo called by Reaumur, from their ſtrong reſemblance to the real pucerons. The two principal kinds of theſe are found on the backs of the leaves of fig-trees, and in little hollow balls at the ſummits of the branches of the box, formed of the upper leaves vitiated by the ſcars of theſe inſects.

FAWN. An appellation given to a buck or doe of the firſt year. See DEER.

FEDOA. A name given by Geſner, and ſome other naturaliſts, to the godwit, more commonly called ægocephalus.

FELIS, in the Linnæan ſyſtem of zoology, forms a large genus of quadrupeds of the order of feræ; the characters of which are theſe: the fore-teeth are ſmall, obtuſe, and equal; they have three grinders; the tongue is furniſhed with prickles all pointing backwards; and the feet are formed for climbing with retractile claws. To this genus belong the lion, tiger, leopard, lynx, ounce, cata-mountain, and domeſtic cat.

FELIS VOLANS. An animal deſcribed by Scaliger, and ſuppoſed to be what we call the flying ſquirrel. This creature has a looſe membrane on each ſide, connecting the fore with the hinder legs; which it can diſtend at pleaſure, and by means of which it is enabled to take ſuch long leaps, as to appear to fly.

FELIS ZIBETHICUS. An appellation given by naturaliſts to the civet-cat, a ſpecies of the viverra in the Linnæan ſyſtem. See CIVET-CAT.

FEMALE. An animal which generates within itſelf; ſo called in oppoſition to the male, which engenders in another. The female, in quadrupeds, and in birds, is uſually ſmaller and weaker than the male; but, in predaceous birds, the female is the largeſt, ſtrongeſt, and moſt courageous.

FERÆ. In the Linnæan ſyſtem of zoology, one of the orders of animals and claſs of mammalia: the characters of which are, that they have ſharp teeth; the upper fore-teeth are ſix in number; and the canine, or dog-teeth, are longer than the reſt. Of this order are, the lion, the tiger, the bear, the cat, the weaſel, the ferret, the didelphis or philander, the otter, the ſea-calf, the dog, the badger, the hedgehog, the mole, the bat, and various others.

FERN-OWL. A provincial name for the caprimulgus or goat-ſucker, called alſo the churn-owl. It is a very beautiful bird; and bears a ſtronger ſimilitude to the cuckow than the owl kind.

FERRA. A fiſh called alſo the Gwiniad, or Guinead.

FERRET. An animal of the muſtela or weaſel kind; called alſo muſtela ſylveſtris, furo, and furunculus.

This animal is a kind of domeſtic in Europe; but in it's wild ſtate it is a native of Africa, from whence it was originally imported into Spain, in order to free that country from the multitudes of rabbits with which it was over-run; and from thence the reſt of Europe were ſupplied with it. It grows to the length of a foot; and has a very ſharp noſe, red and fiery eyes, and round ears. The colour of the body is a pale yellow, but it is alſo found of all the colours of the weaſel kind, white, black, brown, and party-coloured. It alſo reſembles the weaſel in the ſlenderneſs of it's body, and the ſhortneſs of it's legs. It is a lively, active animal; and the natural enemy of rabbits, ſucking the blood of it's prey, but ſeldom mangling it. The Ferret, though a native of the torrid zone, will breed in our climate, and brings forth from five to nine at a time; but it is apt to degenerate, and loſe it's ſavage nature, till an intercourſe can be procured between it and the pole-cat; which in ſome meaſure reſtores the breed to it's natural ferocity. The Ferret has the ſame diſagreeable ſmell as the pole-cat; and, being unable to endure the rigours of our climate in a wild ſtate, it is generally domeſticated, and kept for the purpoſes of the warren. It is trained up to enter the rabbit-holes, and to drive the inhabitants into nets prepared for them at their mouths. To effect this, the Ferret is muzzled; elſe, inſtead of driving out the animals, it would only kill them, and ſuck their blood: but, by this contrivance, the rabbits eſcape from the Ferret, and precipitately run to the mouths of their holes, where they are entangled in the nets. Sometimes, indeed, it happens that the Ferret finds means to diſengage itſelf from it's muzzle, when it is uſually loſt to it's maſter; for, finding all it's wants ſupplied in the warren, it continues there till the ſeverity of the weather proves fatal to it's exiſtence. In order to allure the Ferret from it's retreat, the owners often burn ſtraw and other ſubſtances at the mouth of the hole, or ſtamp with their feet over it: but this does not always ſucceed; for as there are often ſeveral avenues to each hole, the Ferret is neither affected by the noiſe nor the ſmoke, but continues ſecure at the bottom, ſleeping the greateſt part of it's time, and waking only to ſatisfy the calls of hunger.

The female of this ſpecies is ſenſibly leſs than the male, whom ſhe ſeeks with great ardour; and, it is ſaid, that ſhe often dies merely from not being admitted to coition. Theſe creatures are uſually kept in boxes like rabbit-hutches; and are furniſhed with wool, of which they make themſelves warm beds, which ſerve to defend them from the rigours of the climate. They are generally fed with bread and milk; they breed twice a year; and ſome of them devour their young the inſtant they are produced.

The Ferret is an uſeful, but diſagreeable and offenſive animal: it's ſcent is fœtid; it's nature is voracious; it is tame without attachment; and, ſuch is it's appetite for blood, that it has been known to attack and kill children in their very cradles. It is eaſily irritated; and though at all times it's ſmell is offenſive, it is then peculiarly ſo; and it's bite is not to be cured without great difficulty.

FERRET, INDIAN. A name applied by ſome to expreſs the animal known in America by the appellation of quirpele and quil. See ICHNEUMON.

FIARSING. A Swediſh and Daniſh appellation for the draco marinus. It is a ſpecies of the trachinus, according to Artedi; and is diſtinguiſhed from the reſt by having it's lower jaw longer than the upper, and being deſtitute of beards.

FIATOLA. A name given by the Italian fiſhermen to the ſtromateus.

FIBER, or CASTOR FIBER, of Linnæus. An animal with ſtrong cuttting teeth; ſhort ears, hid

hid in the fur; a blunt noſe; hair of a deep cheſnut brown; a broad tail almoſt oval, horizontally compreſſed and covered with ſcales; with the fore-feet ſmall, and the hind-feet large. The length of this animal, from noſe to tail, is about three feet; and the tail is eleven inches long, and three broad. See BEAVER.

FIBULA. A claſs of echinſdermata, having the mouth in the middle of the baſe, and the aperture of the anus on one edge. They are chiefly found foſſile.

FICEDULA CANNABINA. A name ſometimes given to the cannevarola, or leſſer reed-ſparrow.

FICUS. A peculiar ſpecies of ſea-ſhell of the genus of the dolium, having a remarkably depreſſed clavicle, it's diſtinguiſhing characteriſtic.

FIELD-DUCK, FRENCH. A ſpecies of buſtard, ſo called from it's flying near the ground, as the duck does near the water. It is as large as the pheaſant; but the head is like that of the quail, and the bill like that of the hen. Theſe birds are caught like partridges; they fly very ſwiftly at a ſmall elevation from the ground, perhaps two or three hundred paces, and then alight: they likewiſe run with amazing fleetneſs. The head, back, and wings, are of a browniſh yellow colour, variegated with black and white; the breaſt, belly, and thighs, are whitiſh; and the legs and feet are cinereous. There are three toes on each foot, as is uſual in the buſtard kind. The fleſh is highly eſteemed.

FIELD-FARE. This bird is of the thruſh kind, and is called the turdus pilaris by ornithologiſts. It is larger than the common thruſh; it's length is ten inches, and it's breadth ſeventeen. The head is aſh-coloured, inclining to olive, and ſpotted with black; the back and greater coverts of the wings are of a fine deep cheſnut; the rump is cinereous; and the tail is black, the lower parts of the two middlemoſt feathers, and the upper ſides of the exterior feathers, excepted, the firſt being aſh-coloured, and the latter white. The legs are black; and the talons are very ſharp. This bird generally weighs about four ounces.

The Field-Fare is a bird of paſſage, ſpending the ſummer in the northern parts of Europe. It builds it's neſt in the loftieſt trees, feeds on all kinds of berries, and is particularly fond of thoſe of the juniper. It viſits Great Britain about Michaelmas, and leaves it the latter end of February or the beginning of March.

This bird, and the red-wing, are the turdi of the Romans, which they fattened with a compoſition of figs and bread. Varro informs us that they were birds of paſſage, arriving in Italy in autumn, and quitting it in the ſpring.

Theſe birds, whoſe fleſh is eſteemed ſuch a delicacy, are eaſily caught with bird-lime in the ſubſequent manner. The fowler muſt endeavour to kill two or three with a gun; then he muſt tie one or two of them to the higher branches of ſome buſhy tree, in ſuch a manner that they may ſeem alive and perched there; after this, he muſt prepare two or three hundred twigs, covering them well with the water bird-lime, made warm for that purpoſe; then taking a birchen bough, and on it placing all the twigs, he muſt tie the whole faſt to the tree where the dead game is ſuſpended. Having obſerved to fix this line in a place where Field-Fares uſually reſort to feed in the morning, two or three dozen may ſometimes be ſecured at once.

FIELD-FARE, PYED. This curious ſpecies was accidentally ſhot among a flock of common Field-Fares; and is but little known. The bill is yellow; the head and neck are white, ſpotted with lead-colour and black; and there is a yellow ſpot or ſpace on the fore-part of the neck, round which are ſeveral little dark ſpots or ſhades. The back is a darkiſh brown; the rump is more pale; and the middle of the breaſt is a browniſh yellow, interſperſed with a variety of tranſverſe black lines. The quill-feathers of the wings are of a duſky colour; but the exterior edges, as well as the edges of the ſcapular feathers, are white. The belly and thighs are white, ſpotted with black; the tail and claws are alſo black; and the feet are of a duſky brown hue.

FIG INSECT. An Engliſh appellation for the faux-puceron of Reaumur. Theſe inſects, when at their full growth, are each about the bigneſs of the head of a large pin; but among them are uſually found ſeveral which are ſmaller, down to ſuch as are ſcarcely perceptible by the naked eye. They are found in vaſt numbers on the backs or underſides of the leaves of the fig-tree; but they are never ſeen in cluſters like the pucerons.

The body and breaſt of this inſect are green; and the caſes of the wings are white and hairy. It has two antennæ or horns, which it can exert at pleaſure; but they are uſually lodged under the furrows of the wings, and conſequently not perceptible till the animal is turned on it's back: the head alſo is incurvated; and the eyes ſeem directed to look only at objects placed beneath them. It has ſix legs; and a ſmall trunk iſſuing from the extremity of the head, of a lively green colour, and terminated by a ſharp point: this trunk has a fine brown hair-like filament, which the inſect protrudes at pleaſure, and which ſeems to be an organ deſtined to convey into the body the juices extravaſated by the wounds and the ſuction of the trunk.

This creature uſually remains perfectly motionleſs on the leaf on which it is found; but has this peculiarity in it's poſition, that it's head always reſts on one of the ribs of the leaf, and it's body on the plain part, by which means the anterior part of the head is raiſed above the ſurface of the plain part of the leaf; and the creature can move it's trunk about at pleaſure, and fix it into different parts of the leaf, while it's body continues inactive.

Theſe inſects frequently change their ſkins during their growth; and, in the months of May and June, they all become winged. They afford a peculiar ſpecies of four-winged fly, remarkable for hopping; but as it's poſterior legs are not much longer than the reſt, it's leaps are but ſhort. The body of this fly is green; the wings are bordered with yellow; and the legs are white. The trunk is of the ſame nature with that in it's original ſtate, and with this it continues to ſuck the juices of the leaves of the fig-tree in the ſame manner as it did before it's transformation.

The manner of propagation in theſe inſects is not certainly known. The pucerons, to which they approach nearer in figure than to any other animals, on diſſection, ſhew young ones incloſed: but theſe, in whatever ſtate they are examined, never exhibit any ſuch appearance, not ſo much as eggs being found in them. It ſhould therefore ſeem that their eggs are too minute for our inſpection; but that they are oviparous, not viviparous animals.

FIG-SHELL. See Dolium.

FIGWORT-WORM. An inſect which feeds on the leaves of the ſcrophularia, or fig-wort, uſually eſteemed a caterpillar; but which, in fact, is one of thoſe inſects called fauſſe-chenilles by the French.

FILANDERS. A genus of minute worms, which are found in the throat, the heart, the liver, and the lungs of the hawk; and by which that bird is greatly incommoded.

Theſe Filanders, or vermiculi, are of four kinds, according to the part of the animal they infeſt. The firſt are in the gorge or throat; the ſecond are in the belly; the third are in the reins; and the fourth are called needles, on account of their fineneſs. As theſe worms are very reſtleſs, the bird frequently endeavours to vomit them up; and, in the action of opening it's bill, they may eaſily be perceived. From the throat, they aſcend to the larynx and brain; and, finally, ſpread over the whole body. Bad food generally breeds theſe inſects; and they are moſt effectually eradicated by making the bird ſwallow a clove of garlick.

FILE SHELL-FISH. A name ſometimes given to the pholas. See Pholas.

FIN-FISH, the balæna phyſalis of Linnæus. A ſpecies of whale diſtinguiſhed from the common fiſh of that name by a fin on the back, placed very low, and near the tail.

The length of this fiſh is equal to that of the common whale, but the body is much more ſlender. It is furniſhed with whale-bone in the upper jaw; but, being ſhort and knotty, it is not much eſteemed. The blubber alſo on the body of this kind is very inconſiderable; which circumſtances, added to it's extreme fierceneſs and agility, render the capture very dangerous and inſignificant. However, the natives of Greenland hold it in much eſteem, as it affords a great quantity of fleſh very agreeable to their palates. The lips are brown, and reſemble a twiſted rope; and the ſpout-hole appears as if it were ſplit in the top of it's head, through which it blows water with great violence to an amazing height.

Some authors conjecture this to have been the phyſeter, or blowing-whale, of Oppian, Ælian, and Pliny: but, ſince thoſe writers have left no particular deſcription of it, we cannot pretend to judge on what grounds this opinion is formed, as all whales poſſeſs the faculty of blowing or ſpouting out water.

FINCH. A genus of birds with acute pointed, conical, hard bills; of which there are numerous ſpecies.

Finch, Bull. See Bull-Finch.

Finch, Gold. See Gold-Finch.

Finch, Green. See Green-Finch.

Finch, Chaff. See Chaff-Finch.

Finch, Grey. This ſpecies is a native of the Eaſt Indies; and in ſize, ſhape, and manners, bears a ſtrong reſemblance to the common linnet. The bill is of a dark aſh-colour; and the eyes are black. Round the baſe of the lower chap of the bill is a little whiteneſs, which extends itſelf under the eyes. The breaſt, belly, and the whole under ſide, are of a very light blueiſh aſh-colour; but the top of the head, and the upper ſide of the neck and back, are of a dark cinereous. The rump, and coverts of the upper ſide of the tail, are of a very light aſh; and the upper ſides of the wings are duſky, except that the edges of the feathers are of a light aſh. The greater quills are duſky at their tips, and white at their bottoms, which forms a white ſpot on each wing; and the legs, feet, and claws, are of a dark fleſh-colour.

Finch, Blue-Bellied. This bird is four inches and a half in length; the bill is ſhaped like that of the goldfinch, and of a dirty fleſh-colour; the top of the head, the upper ſide of the neck, and the back and wings, are of an aſh-coloured brown, inclining to purple; the ſides of the head quite round the eyes, the throat, breaſt, belly, rump, tail, and covert-feathers above and below, are all of a fine light blue or ſky-colour; and the legs, feet, and claws, are brown. This bird is a native of Angola, in Africa; and is called, by the Portugueſe ſettlers, azulinha.

Finch, Purple, of Catesby. This beautiful bird has a white belly; and the reſt of the body is of a deep violet-colour, except the tail, which is brown about an inch from it's extremity. The wings are ſomewhat deeper than the reſt of the body; and the feet are grey.

Finch, Bahama, of Catesby. This variety has a black head, breaſt, and back; a white ſtreak above and below each eye; and a yellow ſpot under the bill. The breaſt and belly are orange-coloured; the upper part of the neck and rump are of a dark red; the wings and tail are brown mixed with white; and the feet are of a lead-colour.

Finch, Painted, of Edwards. The bill of this bird is ſhort, thick at the baſe, terminating in a point, and of a duſky colour; the eyes are hazel-coloured; the head and the hinder part of the neck are of a moſt beautiful blue; and the throat and breaſt are red, till the red gradually diſſolves into an orange colour on the belly. The back is of a light yellow green; the rump or covert-feathers of the tail are red; the wings and tail are of a blueiſh green above, and aſh-coloured beneath; and the legs and feet are fleſh-coloured.

The hen of this beautiful ſpecies is entirely of a parrot green colour, except the under ſide, which has a conſiderable tinge of yellow.

Finch, Collared. This bird has a pretty ſtrong black bill; and the head is alſo black, except a ſpace round the eyes and the baſe of the bill, which is white; the throat is alſo white; a line of the ſame colour paſſes from the throat all round the neck, forming a kind of collar; and on the lower part of the neck before is a black bar, which more than half encompaſſes the neck. The back and tail are of a dark aſh-coloured brown; the covert-feathers of the latter are ſomewhat lighter; the wing-feathers have black centres, and their borders are of a bright reddiſh brown; the greater quills are black; the breaſt, belly, and thighs, are white, ſhaded with a faint orange-colour; and the legs and feet are duſky.

Finch, Brazilian, Red and Blue. The bill of this ſpecies is a very fine red; the feathers round the upper part of the bill and the ſides of the head are of a fine purple or bloſſom-colour; the eyes are dark, but the ſurrounding ſkin is of a fine ſcarlet colour; and between the bill and the eyes there is a duſky line. The throat, immediately beneath the bill, is black; the top of the head, the neck, back, covert-feathers of the wings, breaſt, and belly down to the thighs, are of a dark duſky red; the quills of the wings are duſky; and the lower part of the back, the belly, and the covert-feathers both above and below the tail, are of a very fine blue. The tail is pretty long, and black; the middle feather is the longeſt, and the ſide-feathers gradually become ſhorter. The legs and feet are of

of a darkiſh fleſh-colour. This curious bird is a native of Brazil.

Finch, Red-Breasted, Long-Tailed. This ſingular ſpecies has a ſhort thick bill of a blueiſh colour; the whole head, and the throat as low as the breaſt, are blackiſh; the back, wings, and tail, are alſo black; but the edges of the greater wing-feathers appear a little whitiſh. The tail-feathers, which are wholly black, are about thirteen inches and a half long, and three-quarters of an inch wide near the rump, decreaſing gradually to leſs than a quarter of an inch at their tips. The breaſt is of a full deep orange-colour; the hinder part of the neck is ſomewhat lighter; the belly and thighs are white; the lower belly, and the covert-feathers under the tail, are duſky; and the legs, feet, and claws, are of a fleſh-colour.

But the moſt extraordinary circumſtance attending this bird is, that it changes it's colour, and has no long feathers in it's tail for upwards of ſix months in the year. About the beginning of November, it ſheds it's tail, and molts it's feathers; when it's colours totally alter; the head becomes black and white ſtreaked; the breaſt, back, and covert-feathers of the wings, turn to a reddiſh brown ſpotted with duſky; the greater quills and tail-feathers, to a blackiſh brown; and the whole belly, thighs, and coverts, to white. In this ſtate it continues during the winter; but at the beginning of ſummer it molts again, when the long feathers of the tail begin to ſhoot out; and towards the latter end of June, or the beginning of July at fartheſt, it reſumes it's gayeſt dreſs.

This account, however improbable it may appear, is given by the ingenious Edwards; who informs us, that he carefully obſerved all the above changes in a live ſpecimen at London.

FINGER-SHELL. An appellation given to a ſpecies of marine ſhell brought from the Eaſt Indies, and ſo called from it's reſemblance to the human finger. There are ſeveral ſpecies.

Finger-Shell, Red. This variety is about three inches long, and of the thickneſs of a man's finger. The ſurface is ſmooth, except towards one end, where there are a few furrows. It is open at both extremities; and the colour is a fine variegated red, from the ſtrongeſt damaſk roſe-colour to the fainteſt carnation.

Finger-Shell, Crooked. This ſpecies, which is variegated with brown and blue, is about ſix inches long, three-quarters of an inch broad, and incurvated after the manner of a bow. The ſurface is ſmooth and gloſſy; but the extremities of many broken plates are perceptible on it, and it is of a pearly white internally.

Finger-Shell, Brown and White. This ſhell is ſlender and ſtraight, about three inches long, and near a third of an inch in diameter. It is open at both ends; and the ſurface, though very gloſſy, is ſomewhat irregular. The general colour is an olive brown, variegated in ſome places with white; and the interior ſurface is entirely white.

Finger-Shell, Violet-Coloured. This ſpecies is four inches long, nearly half an inch in diameter, and quite open at both ends. It is very thin and brittle; the ſurface is irregular; and the colour is a fine blueiſh purple, or violet.

FINGERY. Another name for the fiſh called the branlin.

FINNIKIN. A particular ſpecies of pigeon, called by Moore columba in gyrum flectens. It's ſhape and ſize reſemble thoſe of the common pigeon. The crown of the head is mottled; and on it's hinder part riſes a crown, which running down the neck, bears ſome ſimilitude to a horſe's mane. The colour of theſe birds is either black or a pyed blue; and they receive their name from the very ſingular manner in which the male ſtrives to recommend himſelf to the notice of the female.

FIRE-FLAIRE. A fiſh of the ray kind, called alſo paſtinacha marina, which ſeems to be the dread of even the boldeſt and moſt experienced fiſhermen. Nature has armed this animal with a barbed weapon proceeding from the tail, about five inches in length; concerning the tremendous effects of which, many aſtoniſhing fables have been handed down to us by Pliny, Ælian, and Appian. Theſe naturaliſts aſcribe to it a kind of venom which affects even the inanimate creation; trees touched by it inſtantly loſe their verdure; and rocks themſelves are repreſented as unable to reſiſt this potent poiſon. The enchantreſs Circe is ſaid to have armed her ſon with a ſpear headed with the ſpine of this fiſh, as the moſt irreſiſtible weapon ſhe could ſupply. Indeed, it is unqueſtionable, that darts and ſpears, in very early ages, were headed with this bone inſtead of iron. The Americans head their arrows with the bones of fiſhes to this very day; and, from their hardneſs and ſharpneſs, they are no contemptible weapons. But that the ſpine of the Fire-Flaire is poſſeſſed of the deleterious qualities aſcribed to it, we have every reaſon to doubt; though ſome men of high reputation in the literary world, and the whole tribe of fiſhermen, contend for it's venomous effects. In fact, it is capable of inflicting a very terrible wound, attended with dangerous ſymptoms; but it certainly cannot be poſſeſſed of any poiſon, as the ſpine has no ſheath to preſerve the ſuppoſed venom on it's ſurface, and the animal is deſtitute of glands, which would be neceſſary to ſeparate the noxious fluid. Beſides this, all thoſe animals which are furniſhed with envenomed ſtings or fangs, ſeem to have them ſtrongly connected with their preſervation and exiſtence; and ſhould they be amputated, or even injured, the creatures themſelves would ſpeedily languiſh and die. But the caſe is far otherwiſe with reſpect to the ſpine of the Fire-Flaire, which is fixed to the tail like a quill, and annually ſhed in the ſame manner: it may, indeed, be neceſſary for the creature's defence, but by no means for it's exiſtence.

Wounds inflicted by the tails of animals carry ſomething terrible in the idea; and hence fear may have added poiſon to the pain, and conjured up imaginary dangers. The negroes univerſally believe that the ſting of this creature is poiſonous, but they never die of the wound; for, on opening the fiſh, and applying it to the part affected, it produces a ſpeedy cure.

FIRE-FLIES. A genus of Flies which exhibit a luminous appearance in the night-time. Of theſe various ſpecies are found in different quarters of the globe.

Fire-Flies, East Indian. Theſe Flies are each about an inch broad, and as much in length. The head, which is brown, has two horns or feelers; and the neck is red. They have four wings; the uppermoſt of which are brown and hard, and the under ſoft: the ſhining ſubſtance is contained in a black bag ſituated on their backs, which is hid with their wings, except when in motion. During the rainy ſeaſon, prodigious numbers of them ſwarm among the trees, on the bloſſoms of which they principally feed.

Fire-Flies, West Indian. According to

Pere du Tertre, theſe inſects reſemble living ſtars; of which ſuch immenſe numbers appear during the night, that the air ſeems full of them. They have not any luminous appearance in the day-time, and therefore are little noticed by thoſe who are ignorant of their qualities. They have ſomething of the appearance of dirty beetles; and delight to frequent places where rotten wood is found, till about ſun-ſet, when they fly abroad, and appear like ſo many lighted tapers carried round the woods by inviſible hands. They purſue the light of a candle, or any other luminous object, with ſo much ardour, that they often periſh in the flame.

The ſame gentleman gravely informs us, that the poor Popiſh clergy, when in want of candles or oil, catch one of theſe flies, by the light of which they read their matins with as much facility as with a lamp. When alive, and in full vigour, a flame ſeems to proceed from all parts of their bodies; but, when they become ſick, it grows weak; and, after death, it is quite extinguiſhed.

FIRE-FLIES OF MARTINICO. Theſe creatures, which are ſomewhat ſmaller than common flies, yield a ſort of ſparkling golden light extremely agreeable. This light reſides in a ſort of white ſubſtance, of which they are full; and, when inclined, they are capable of either concealing or diſcloſing it.

FIRE-FLIES OF GUIANA. Theſe flies are of two kinds. The largeſt is upwards of an inch in length; and has a very large head, connected with the body by a joint of a particular ſtructure, with which it ſometimes makes a loud noiſe. It is furniſhed with two feelers, or horns; two wings; and ſix legs. Under it's belly lies a circular patch, which in the dark ſhines like a candle; and on each ſide of the head, near the eyes, is a prominent, globular, luminous body, ſomewhat larger than a muſtard-ſeed. Each of theſe bodies reſembles a riſing ſtar, emitting a bright powerful light; for two or three of theſe inſects being put into a glaſs, afford ſufficient light to read by. Even when the flies are dead, their bodies will ſtill afford conſiderable light, though leſs vivid than before; and, if bruiſed or rubbed over the hands and face, they will exhibit a luminous appearance like phoſphorus. Theſe Flies, which are of a reddiſh brown colour, live in rotten trees in the day-time, and never venture abroad till the approach of night.

The other ſpecies is about half the ſize of the former; and their light proceeding from under their wings, it is only viſible when they are elevated. The air is entirely filled with theſe inſects in the night-time; but, like the reſt of the kind, they are ſeldom viſible during the day.

FISANELLE. A Venetian name for the ſpecies of water-fowl of the colymbus kind called by authors the colymbus major or great diver. It generally weighs about a pound: the feathers are downy, ſoft, and thick-ſet; the head and neck are brown; the back is blackiſh; the ſides and belly are browniſh; the breaſt is a ſilvery white; the wing-feathers are black and white; the toes are all connected by narrow membranes, but not webbed; and it is deſtitue of a tail.

FISCHERLIN. An appellation given by many of the northern nations to a ſmall ſpecies of the larus or gull; called by Ray larus piſcator; by Linnæus, larus minuta; and, in England, the leſſer ſea-ſwallow. It is ſomewhat leſs than the common black-bird. The bill is yellow, tipped with black; the forehead and cheeks are white; from the eyes to the bill runs a black line; the wings are long and grey; the feet are ſhort and yellow; the breaſt and belly are white, and of an exquiſite gloſs; the crown of the head is black; and the back is grey.

Theſe birds are very common on ſome parts of the Britiſh coaſts during the ſummer ſeaſon; but being extremely delicate in their natures, they are unable to endure the inclemency of our winters, and therefore retire to warmer climates.

FISGURN. A German fiſh of the ſhape of the lamprey. See MISGURN.

FISH, BLACK, OF ALEPPO. Dr. Ruſſel, who deſcribes this fiſh in his Hiſtory of Aleppo, ſays that it reſembles the ſilurus Rondeletii in ſhape; and, like it, has no ſcales. The head and back are black; the lateral line extends quite from the head to the tail; and, below it, the colour generally changes to a dark purple. The under part of the head is alſo of the ſame colour. The head is flat; and the body is round, except near the tail, where it becomes ſomewhat depreſſed. The mouth is not ſo large in proportion as that of the ſilurus; but, in it's ſtructure, it entirely agrees with the deſcription of that fiſh. A ſmall cirrus riſes on each ſide from the edge of the noſtril; two others of greater dimenſions proceed from the angles of the mouth; and there are alſo four more on the lower lip. The eyes are ſituated near the corner of the mouth; and there are four branchiæ on each ſide, with a double row of ſix points. Near the branchiæ there are two fins, compoſed of ſeven radii; to the anterior part of which a pretty ſtrong prickly bone is united. Above the anus are two ſmall fins; a long one extends from under the anus to the tail, and another from the neck along the back; neither of which join with the tail.

This fiſh is caught in the River Orontes, and in the ſtagnant waters in it's vicinity; and, from November to March, the markets of Aleppo are plentifully ſupplied with it. The fleſh is as red as beef, rank-taſted, and deemed unwholeſome; but, for want of better fare, it is much uſed.

FISHER. See SABLE.

FISHES. In the Linnæan ſyſtem, the fourth claſs of animals, including four orders; namely, apodes, jugulares, thoracica, and abdominales; which comprehend forty-ſeven genera, and four hundred ſpecies. However, the new Artedian ſyſtem divides Fiſhes into five diſtinct orders; the malacopterygii, or ſoft-finned Fiſh; the acanthopterygii, or prickly-finned Fiſh; the branchioſtegi, or Fiſhes without bones in the membranes over the gills; the chondropterygii, or Fiſhes with cartilaginous rays in the fins; and the plagiuri, or Fiſhes whoſe tails are placed horizontally.

The ocean being the great receptacle for Fiſhes, ſome have imagined that all the varieties are naturally of that ſalt element, and that they have only accidentally migrated into freſh water. A few ſtill ſwim up rivers, in order to depoſit their ſpawn; but the great body of Fiſhes keep at ſea, and are incapable of exiſting in freſh water. In that extenſive and inexplorable abode, millions reſide, whoſe manners, and whoſe very form, are wholly unknown. The curioſity of mankind, indeed, has drawn ſome from their depths, and his wants many more: with the figures of theſe at leaſt he is acquainted; but, with regard to their purſuits, habits, times of geſtation, and manner of parturition, theſe are all hid in the turbulent element which protects them.

The

The number of Fiſhes with whoſe names and figures we are in ſome meaſure acquainted, ſomewhat exceeds four hundred. Thus, to appearance indeed, the hiſtory of this claſs of nature is tolerably copious; but when we come to a more minute enquiry, it will be found, that of the greateſt part of theſe we know but few qualities. Moſt Fiſhes preſent the ſame external form, ſharp at either end, and ſwelling in the middle; which figure enables them with greater celerity and eaſe to traverſe the fluid they are deſtined to inhabit. That peculiar ſhape which nature has given to moſt Fiſhes, human art has endeavoured to imitate in ſuch veſſels as are deſigned to ſail with the greateſt ſwiftneſs; but the progreſs of ſuch machines is inſignificant when compared to the rapidity of theſe animals. Any of the larger kind of Fiſhes overtake a ſhip in full ſail with great eaſe, play round it without effort, and outſtrip it at pleaſure. All parts of their bodies ſeem adapted to accelerate their motion; their fins, their tails, and the undulation of their back-bones, aſſiſt progreſſion; and it is to that flexibility of body which art can never give, that Fiſhes owe their ſuperior velocity.

The fins are the chief inſtruments of motion in theſe animals; and thoſe in ſome of them are more numerous than in others. A Fiſh, compleatly equipped for ſailing, is furniſhed with two pairs, and three ſingle fins, two above and one below. Thus qualified, it moves with the utmoſt rapidity, and undertakes voyages of a thouſand leagues in a ſeaſon. Thoſe Fiſhes, however, that have the greateſt number of fins, are not always the ſwifteſt: the ſhark is eſteemed one of the moſt active ſwimmers, yet it wants the ventral, or belly-fins; and the haddock, which it always outſtrips, is compleatly fitted for motion.

Beſides aſſiſting the Fiſh in it's progreſſion, the fins are neceſſary in riſing or ſinking, in turning, or even leaping out of the water. The pectoral fins, like oars, ſerve to puſh the creature forward: theſe are placed at ſome diſtance behind the opening of the gills; and are generally large and ſtrong, anſwering the ſame purpoſes to a Fiſh in the water, that wings do to a bird in the air. By the continued motion of theſe fins, the Flying-Fiſh ſometimes riſes out of the water, and flies above an hundred yards, till, wearied with it's exertions, it drops again into it's native element. The pectoral fins ſerve alſo to balance the head of the Fiſh, when too large for the body, and to keep it from falling prone to the bottom; as is the caſe with large-headed Fiſh, when the pectoral fins are removed. The ventral fins are placed under the belly, towards the lower part of the body; and, whatever may be the ſituation of the Fiſh, theſe are always ſeen flat on the water, and rather to raiſe or depreſs the animal than to forward it's progreſſive motion. The dorſal fin is ſituated along the ridge of the back; and not only keeps the Fiſh in equilibrio, but alſo aſſiſts it's velocity. Many Fiſhes, indeed, are deſtitute of this appendage; but it is very large in all flat Fiſh, the pectoral fins of which are proportionably ſmaller. The anal fin occupies that part of the creature which lies between the anus and the tail, and this ſerves to keep the Fiſh in it's upright or vertical ſituation. But the tail, which in ſome Fiſhes is horizontal, and in others perpendicular, ſeems to be the grand inſtrument of motion; the fins being all ſubſervient to it, and only giving direction to it's powerful impetus, by which the Fiſh ſeems to dart forwards with ſo great velocity.

If any Fiſh is put into a large veſſel filled with water, theſe poſitions will be eaſily illuſtrated. The animal, in a ſtate of repoſe, ſpreads all it's fins, and ſeems to reſt on it's pectoral and ventral fins near the bottom. If the Fiſh folds up either of it's pectoral fins, (a faculty which it poſſeſſes) it immediately inclines to the ſame ſide; when it is deſirous of a retrograde motion, ſtriking with the pectoral fins in a contrary direction effectually produces it; and when it deſires to turn, a blow from the tail ſends it about; but if the tail ſtrikes both ways, then the motion is progreſſive. In purſuance of theſe obſervations, if the dorſal and ventral fins be cut off, the Fiſh reels to the right and left, and endeavours to ſupply it's loſs by keeping the reſt of it's fins in unceaſing action. If the right pectoral fin be amputated, the animal inclines to that ſide; if the ventral fin on the ſame ſide be removed, then it loſes it's equilibrium entirely; but when the tail is cut off, the Fiſh loſes all motion, and yields itſelf to the impulſe of the water.

Hence it appears, that each of thoſe inſtruments has a peculiar uſe aſſigned it; but, at the ſame time, that they all conſpire to aſſiſt each other's motions. It is certain, however, that the number, the ſize, and the ſituation of the fins, ſeem rather to correſpond with the animal's figure, than entirely to anſwer the purpoſes of promoting it's ſpeed. If the head of the Fiſh is large and heavy, the pectoral fins are alſo large, and placed forwards, to prevent it's overſetting; but if the head is ſmall, ſharp-pointed, and not too heavy for the tail, the pectoral fins are likewiſe ſmall, and the Fiſh is totally deſtitute of the ventral.

As terraqueous animals are generally furniſhed with coverings to keep off the injuries of the weather, ſo the inhabitants of the water are covered with a ſlimy glutinous matter, which, like a ſheath, defends their bodies from the immediate contact of the ſurrounding fluid, and aſſiſts them in their eaſy progreſs through the water. Beneath this, in many kinds, is found a ſtrong covering of ſcales, which, like a coat of mail, proves a moſt powerful defence; and under that, before we come to the muſcular parts of the body, an oily ſubſtance is lodged, which ſupplies the requiſite warmth and vigour.

Thus protected, and fitted for motion in it's native element, the Fiſh ſeems as well furniſhed with the means of happineſs as quadrupeds or birds; but if we more accurately inſpect it's faculties, we ſhall find it much their inferior. The ſenſe of touching, which birds and beaſts in ſome degree enjoy, can be but very imperfectly felt by the Fiſh, wrapped up in it's own coat of mail. The ſenſe of ſmelling, indeed, ſo exquiſite among beaſts, and a little known among birds, is imparted to Fiſhes but in a very limited degree. It is true, that all Fiſhes have one or more noſtrils; and even thoſe which have not the apertures perceptible without, have notwithſtanding the proper olfactory nerves within. But as air is the only known medium for the diſtribution of odours, it cannot be ſuppoſed that theſe animals, reſiding in water, can poſſeſs any power of being affected by them. If they have any perception of ſmells, it muſt be in the ſame manner in which the human ſpecies diſtinguiſh by their taſtes; and it is probable that the olfactory membrane in Fiſhes ſupplies the place of a diſcriminating

a diſcriminating palate: by this they judge of ſubſtances that, firſt tincturing the waters with their vapours, are thus conveyed to the noſtrils of the Fiſh, and probably produce ſome kind of ſenſation.

As to taſting, it ſeems very defective among Fiſhes; the palate of moſt of them is hard and bony, and conſequently incapable of the powers of reliſhing different ſubſtances. This ſenſe among quadrupeds, who poſſeſs it in a moderate degree, ariſes from the ſoft pliancy of the organ, and the delicacy of the ſkin which covers the inſtruments of taſting; and in them it may be conſidered as a more perfect and delicate kind of feeling: but, in the bony palates of Fiſhes, all powers of diſtinguiſhing being wanting, they frequently ſwallow the fiſherman's plummet with as much avidity as his bait.

The ſenſe of hearing in Fiſhes is ſtill more imperfect, even if it exiſts at all. Certain it is, that anatomiſts have not been able to diſcover, except in the whale kind, the ſmalleſt traces of any organs of ſound about the heads of Fiſhes. Indeed, in the centre of the brains of ſome of theſe animals are a few little bones; but their number and ſituation ſeem entirely accidental. Klein, however, ſuppoſes them to conſtitute the organs of hearing; but if we conſider their perfect diſſimilitude to thoſe bones which ſerve for hearing in other animals, we ſhall be little inclined to adopt his opinion. The greateſt number of Fiſhes are entirely deſtitute of thoſe bones; ſome have them in ſmall numbers, and others in abundance; yet neither teſtify any excellence or defect in hearing. To what purpoſe, indeed, ſhould this ſenſe be given to animals which are incapable of making themſelves heard? they have no voice to communicate with each other; and, conſequently, auditory organs would be ſuperfluous. Mr. Gowan, who kept ſome gold Fiſhes in a vaſe, informs us that, whatever noiſe he made, he could not diſturb them. He ſhouted as loud as poſſible, putting a piece of paper between his mouth and the water, to prevent the vibrations from affecting the ſurface, and the Fiſhes ſeemed ſtill inſenſible; but when the paper was removed, and the ſound had it's full play on the water, the animals ſeemed inſtantly to feel the change, and ſhrunk to the bottom. From this, and many other experiments, it is pretty obvious, that Fiſhes are as deaf as they are mute; and that when they appear to be alarmed at any noiſe, it is only from the vibrations of ſound affecting the water.

Fiſhes are in a tolerable degree poſſeſſed of the ſenſe of ſeeing; and yet, if we compare it with that of other animals, even this appears obſcure. The eyes of moſt Fiſhes are covered with the ſame tranſparent ſkin that overſpreads the reſt of the head; which nature ſeems to have given them as a defence in the water, they being totally deſtitute of eye-lids. The cryſtalline humour, which in quadrupeds is flat, in Fiſhes is perfectly round, or ſometimes ovated: hence it is evident, that theſe animals are extremely ſhort-ſighted; and that, even in the water, they are incapable of perceiving objects at a any conſiderable diſtance; which might be eaſily aſcertained, by comparing the refraction of bodies in the water with that formed by a ſpherical lens.

From this ſhort ſurvey of the ſenſes of Fiſhes, it appears ſufficiently obvious, that this claſs of animals are far behind quadrupeds in their ſenſations, and, conſequently, in their enjoyments. Nature ſeems to have fitted them with appetites and powers of an inferior kind; and formed them for a ſort of paſſive exiſtence in the heavy element to which they are conſigned. To preſerve their own exiſtence, and to continue it to their poſterity, fill up the whole circle of their purſuits and enjoyments; and to theſe they ſeem impelled rather by neceſſity than choice. Their ſenſes are incapable of making any diſtinctions; and they move forwards in purſuit of whatever they can ſwallow, conquer, or enjoy.

A craving deſire of food ſeems to give the ruling impulſe to all their motions. This appetite impels them to encounter every danger; and to their rapacity no bounds appear preſcribed. Even when taken out of the water, and almoſt expiring, they greedily ſwallow the very bait which lured them to deſtruction. Their digeſtive powers ſeem, in ſome meaſure, to increaſe with the quantity of food they conſume; and a ſingle pike has been known to devour an hundred roaches in three days. The amazing digeſtive faculties in the cold maws of Fiſhes have juſtly excited the curioſity of philoſophers; and have effectually overturned the ſyſtems of thoſe who maintain that the heat of the ſtomach is a ſufficient inſtrument for digeſtion. The truth ſeems to be, as ſome experiments of the late eminent Dr. Hunter evince, that there is a power of animal aſſimilation lodged in the ſtomachs of all creatures, which we can neither deſcribe nor define, converting the ſubſtances they ſwallow into a fluid adapted for their own peculiar ſupport. This is effected neither by trituration, by warmth, by motion, by a diſſolving fluid, nor by their united efforts; but by ſome principle in the ſtomach yet unknown, which acts in a manner very different from all kinds of artificial maceration. The food taken into the ſtomach or maw is often ſeen, though nearly digeſted, ſtill to retain it's original form; and, in fact, is ready for a total diſſolution, while to the eye it appears yet untouched by the force of the digeſtive powers.

But though the appetites of Fiſhes are inſatiable, no other animals can endure the want of food for ſo long a time. Gold and ſilver Fiſhes, which are kept in vaſes, often live for months without any apparent ſuſtenance; and whether they feed on aquatic inſects too minute for obſervation, or whether they ſubſiſt on water only, is not ſufficiently aſcertained. Even the pike, one of the moſt voracious of Fiſhes, will exiſt in a pond wholly by itſelf.

Fiſhes that have ſmall mouths feed on worms, and the ſpawn of their own tribe; but thoſe which have wider mouths, ſeek larger prey. The largeſt-mouthed Fiſhes purſue almoſt every thing which has life; and they often meet each other in fierce oppoſition. Indeed, the life of a Fiſh, from the ſmalleſt to the greateſt, is but one continual ſcene of hoſtility, violence, and evaſion. The ſmaller fry, ſenſible of their impotence, wiſely retire into thoſe ſhallows where the greater ſpecies are unable to purſue them; there they become invaders in their turn, and live on the ſpawn of other Fiſh which they find floating on the ſurface of the water. Yet even in the ſhallows they are beſet with dangers: the muſcle, the oyſter, and the ſcallop, lie in ambuſh at the bottom, with their ſhells open to receive the inadvertent wanderers; and, ſhutting them up in theſe priſons, prey upon them at leiſure.

Nor is the purſuit of Fiſhes, like that of land animals, confined to a ſingle region, or to a ſingle

effort:

ſingle effort: ſhoals of one ſpecies follow thoſe of another through vaſt tracts of ocean, from the vicinity of the pole down to the equator. The cod purſues the whiting from the banks of Newfoundland to the ſouthern ſhores of Spain; and in the ſame mannner, the cachalot, or blunt-headed whale, purſues the ſhoals of herrings, and ſwallows thouſands at a gulp.

This is very probably one cauſe of the annual migration of Fiſhes from one part of the ocean to another: but there are other motives which unite in cauſing this; Fiſhes may be induced to change the place of their reſidence for one more congenial to their conſtitutions, or better adapted to depoſiting their ſpawn. It is worthy of obſervation, that Fiſhes are averſe to cold waters, and generally frequent thoſe places where it is warmeſt. In ſummer, they abound in the ſhallows near the ſhore, where the ſun has power to warm the water to the bottom; but, in winter, they frequent the greateſt depths of the ſea, where the cold of the atmoſphere is not ſufficiently penetrating to reach them. Freſh-water Fiſhes are often ſeen dead after ſevere froſts, which have been killed by the ſeverity of the cold, or excluded from the benefit of air by the ice.

Though all the various ſpecies of Fiſh live in the water, yet they all require the aſſiſtance of air. Thoſe of the whale kind breathe the air like the human race, and riſe to the ſurface every two or three minutes for a freſh inſpiration; and thoſe which continue entirely under water muſt be ſupplied with air, otherwiſe they will expire in a very ſhort time. When the ice covers the whole ſurface of a pond, and thus keeps off the air from the ſubjacent fluid, we ſometimes find all the Fiſh are deſtroyed. If a hole be made in the ice, the Fiſh will be ſeen flocking to that part, in order to receive the benefit of a freſh ſupply of the admitted air. Should a carp in a large vaſe of water be placed under an air-pump, and then deprived of it's air, during the operation a number of bubbles appear on the Fiſh's body; ſoon after, the animal begins to breathe more frequently, and with greater difficulty; it then riſes to the ſurface, in order to obtain more air; the bubbles on it begin to diſappear; and the belly, which before was inflated, becomes on a ſudden ſunk, and the animal expires in convulſions at the bottom.

Thus air ſeems eſſentially neceſſary to all animals; yet nothing is more difficult to be accounted for than the manner in which Fiſhes obtain this requiſite ſupply. When a Fiſh is in the water, it is eaſy to obſerve the motion of it's lips and gills, or at leaſt of the bones on each ſide which cover them. This motion in the animal is unqueſtionably analagous to our breathing; but it is water and not air which the Fiſh actually ſucks in, and ſpouts out through the gills at every motion. The manner in which it performs this operation is thus: the Fiſh firſt admits a quantity of water by the mouth, which is driven to the gills; theſe cloſing, keep the water ſo ſwallowed from returning by the mouth; while the bony covering of the gills prevents it from paſſing through them till the animal has extracted the proper quantity of air from the body of water thus impriſoned: then the bony covers opening, give it a free paſſage; by which means alſo the gills are again opened to admit a freſh quantity of water. Should the Fiſh be prevented from the free play of it's gills, or the bony covers be kept from action by any artificial confinement, the animal would ſoon fall into convulſions, and expire in a few minutes.

But though the general reſpiration of Fiſhes may be thus explained, the difficulty remains, to know how this air is managed which the Fiſh ſeparates from the water. There ſeems no receptacle for containing it; the ſtomach, which is the principal cavity within the body, is too much filled with aliment for that purpoſe. There is, indeed, a pretty large cavity, called the air-bladder or ſwim; but philoſophers have long deſtined this to a very different purpoſe. The uſe almoſt univerſally aſſigned to the air-bladder is to enable the Fiſh to riſe or ſink in the water at pleaſure, according as that is dilated or compreſſed. The ancients, however, conſidered the air-bladder as a ſubſtitute for the lungs, and as a ſtore-houſe of air from which the animal might ſupply it's neceſſities; and to this latter opinion ſeveral of the moderns ſeem to incline. We ſhall therefore exhibit both opinions, with their proper ſhare of evidence, and leave the reader to follow the theory which ſeems moſt rational and ſatisfactory. The air-bladder is deſcribed as a bag filled with air, ſometimes compoſed of one, ſometimes of two, and ſometimes of three diviſions, ſituated towards the back of the Fiſh, and opening into the maw or gullet. Thoſe who contend, that this bag is deſigned for raiſing or depreſſing the Fiſh in the water, build on the following experiment: a carp being put into the air-pump, and the air exhauſted, the bladder expands itſelf to ſuch a degree, that at laſt it burſts, and then the Fiſh ſinks, and is ever after incapable of riſing to the ſurface. The air-bladder likewiſe has been pricked and wounded to let out the air; and on this occaſion likewiſe the Fiſh ſunk, and roſe no more. Hence it is inferred, that the uſe of the air-bladder muſt be by the voluntary inflation of the animal, to increaſe the ſurface of it's body; and thus diminiſhing it's ſpecific gravity, to enable it to riſe to the ſurface of the water, and keep there at pleaſure. On the contrary, when the Fiſh is deſirous to deſcend, it only exhauſts this bladder of it's air; and the ſuperficies of the Fiſh being thus diminiſhed, it conſequently ſinks to the bottom.

Such is the account given of the uſe of the air-bladder; but it does not appear to reſt on irrefragable evidence and accurate enquiry. In the firſt place, though nothing is more certain than that a carp will ſwell on being put into an air-pump, yet a mouſe or a frog will do the ſame, and in theſe no air-bladder has ever been diſcovered. A carp will riſe to the ſurface, but this only evinces that the animal wants air; and when it ſinks, it is not from the laceration of the air-bladder, but from it's being totally exhauſted of air. The Fiſh, indeed, after this experiment, will moſt probably continue to creep at the bottom; and ſo will all Fiſh which are ſick and wounded, which muſt be the caſe with this after ſuch an operation. Thus the previous facts prove nothing, but that when the Fiſh is killed in an air-pump, the air-bladder is found exhauſted; and that muſt naturally and neceſſarily happen, for the drain of air by which the Fiſh is ſupplied in the natural way will infallibly oblige it to have recourſe to all it's ſecret ſtores; and as there is an evident communication between the gullet and the air-bladder, the air which the latter contains will obviouſly be drawn away. Indeed, it is pretty clear, that the Fiſh can neither increaſe nor diminiſh the quantity of air in this bladder, according to it's own pleaſure, any more than mankind can that which is contained in their ſtomachs. The animal has not one muſcle for contracting or di-

lating this organ; it's aperture is from the gullet; and what air is injected muſt remain there till the neceſſities, and not the will of the animal, call it forth as a ſupply.

However, to render this more evident, it is certain, that many Fiſh which continually crawl at the bottom, ſuch as the eel and the flounder, are furniſhed with air-bladders; and many are without any bladder, ſuch as the anchovy and the gudgeon, which ſwim at eaſe in any depth. Indeed, the number of Fiſh that want this organ ſeems alone a ſufficient proof that it is not neceſſary for the purpoſes of ſwimming; and as the ventral fins, which in all Fiſhes lie flat on the water, ſeem fully ſufficient to ſupport them at all depths, they can have no abſolute occaſion for this internal apparatus to aſſiſt them in riſing and ſinking. It may, indeed, contribute to thoſe purpoſes; but it is likewiſe very probable, that it has another and a more important uſe.

In every point of view in which we have regarded Fiſhes, they appear inferior to land animals; in the ſimplicity of their conformation, in their ſenſes, and in their enjoyments: but, as ſome degree of compenſation, they enjoy that humble exiſtence a much longer term than any other claſs of animated nature. 'Moſt of the diſorders incident to mankind,' ſays Bacon, 'ariſe from the changes and alterations of the atmoſphere:' but Fiſhes reſide in an element little liable to change; theirs is an uniform exiſtence; their movements are without effort, and their lives without labour. Their bones, alſo, which are united by cartilages, admit of indefinite extenſion; and the different ſizes of animals of the ſame kind among Fiſhes are very various. They ſtill keep growing; their bodies, inſtead of experiencing the rigidity of age, which is the cauſe of natural decay in land animals, ſtill continue increaſing with freſh ſupplies; and as their bodies grow, the conduits of life furniſh their ſtores in greater abundance. How long a Fiſh, which ſeems to have ſcarce any bounds preſcribed to it's growth, continues to live, is not aſcertained; perhaps the life of man would not be long enough to meaſure that of the ſmalleſt. Two methods, which are more ingenious than certain, have been deviſed for determining the age of Fiſhes: the one is by the circles of the ſcales; the other by the tranſverſe ſection of the back-bone. By the firſt method, when the ſcale of a Fiſh is examined through a microſcope, it will appear to conſiſt of a number of circles, one within another: and, as in trees, their age is known by the number of circles in their tranſverſe ſection; ſo, in Fiſhes, we diſcover their age by the number of circles in every ſcale, reckoning one ring for every year. Buffon found a carp, which, by this method of computation, appeared to be upwards of an hundred years old. However incredible this may appear, the accounts of ſeveral authors of veracity tend to confirm the diſcovery. Geſner mentions one of the ſame age; and Albertus brings an inſtance of one which exiſted upwards of double that period.

The ſcate and the ray, having no ſcales, their ages may be found by the other method; which is, by ſeparating the joints of the back-bone, and then examining the number of rings, which the ſurface, where it was joined, exhibits.

For the certainty of theſe methods it is impoſſible to vouch; but we have every reaſon to believe the extraordinary age of ſome Fiſhes. But the fecundity of theſe animals is more extraordinary than their longevity. Some produce their young alive, and others only eggs; the former are the leaſt prolific, and yet they produce in amazing abundance. The viviparous blenny, for inſtance, produces two or three hundred at a time, which immediately divert themſelves by playing round their parent. Thoſe which exclude their progeny in eggs, and are obliged to leave them to chance, at the bottom of ſhallow water, or floating on the ſurface, where it is deeper, are much more prolific; their ſtock being in ſome meaſure proportioned to the danger there is of it's conſumption. But few of theſe eggs, in compariſon, produce animals, being devoured by Fiſhes and aquatic birds: ſtill, however, the numbers that eſcape are ſufficient to ſupply the deep with inhabitants, and to relieve the wants of a very conſiderable part of mankind.

The number that a ſingle Fiſh is capable of producing is almoſt incredible. A ſingle cod is ſaid to produce, in one ſeaſon, as many of it's kind as there are inhabitants in England. Lewenhoeck aſſures us, that the cod ſpawns above nine millions of eggs in one ſeaſon; and ſeveral other ſpecies have a proportional increaſe. But Mr. Harmer has lately purſued the inveſtigation of this curious ſubject with much more accuracy than any of his predeceſſors, and has extended his enquiries to a greater variety of ſpecies than any other perſon. The method which he adopted was, that of weighing the whole ſpawn very exactly; he then took a piece weighing a certain number of grains, and carefully counted the eggs it contained; and by dividing the number of eggs by the number of grains, he found nearly how many eggs there were in one grain. His computation of the number of eggs extended no farther than to thoſe which he could diſtinguiſh by the naked eye; though, by this limitation, he omitted many eggs diſcoverable by a microſcope, which might juſtly have been thrown into the aggregate. The weights he uſed were avoirdupois, and he reckoned 437½ grains to an ounce. The ſubſequent table exhibits the general reſult of his enquiries; the firſt column containing the number of Fiſhes which he examined; the ſecond, their weight; the third, the weight of their ſpawn; the fourth, their fecundity; and the fifth, the ſeaſon of the year when each ſpecies was examined. He has alſo added other columns, exhibiting the portion of ſpawn weighed, the number of eggs found in a grain, and the reſult of examining ſeveral varieties of the ſame ſpecies of Fiſhes of different weights, which may be found in the Philoſophical Tranſactions, Vol. LVII.

Fiſhes.	Weight.		Weight of Spawn.	Fecundity.	Time.
	Oz.	Dr.	Grains.	Eggs.	
Carp - -	25	8	2571	203109	April 4.
Codfiſh - -	-	-	12540	3686760	Dec. 23.
Flounder	24	4	2200	1357400	Mar. 14.
Herring -	5	10	480	36960	Oct. 25.
Lobſter -	36	0	1671	21699	Aug. 11.
Mackrel	18	0	1223½	546681	June 18.
Perch - -	8	9	765½	28323	April 5.
Pike - -	56	4	5100½	49304	April 25.
Prawn -	(127	gr.)	- -	3806	May 12.
Roach -	10	6½	361	81586	May 2.
Shrimp -	(39	gr.)	7	6807	May 3.
Smelt - -	2	0	149½	38278	Feb. 21.
Soal - -	14	8	542½	100362	June 13.
Tench -	40	0	- -	383252	May 28.

With reſpect to the generation of Fiſhes, the general opinion is, that the female depoſits her ſpawn or eggs; and that after this, the male ejects the ſperm or ſemen on it as it lies in the water, by

by means of which it is fecundated. The want of the organs of generation in Fiſhes gives an apparent probability to this: but Linnæus vehemently oppoſes it; affirming that there can be no poſſibility of the impregnation of the eggs of any animal out of it's own body.

For a confirmation of this, the general courſe of nature, not only in birds, quadrupeds, and inſects, but even in the vegetable world, has been called in to his aſſiſtance, as proving that all impregnation is performed while the ova are in the body of the parent; and this great naturaliſt ſupplies the want of the organs of generation by a very ſtrange proceſs, affirming that the males eject their ſemen always ſome days before the females depoſit their ova or ſpawn; and that the females ſwallowing this, it ſerves to impregnate their eggs. About the ſpawning ſeaſon, he tells us, that he has often ſeen three or four females gathered about the male, and greedily ſnatching up into their mouths the ſemen he ejects: he particularly mentions ſome of the eſoces, ſome peach, and ſome of the cyprini, in which he had obſerved that proceſs. But Mr. Tull aſſerts, that he has frequently ſeen Fiſh in actual copulation; and that this is generally performed before the ova arrive at maturity.

All Fiſhes, except thoſe of the whale kind, are deſtitute of thoſe parental ſolicitudes which ſo ſtrongly mark the manners of the greateſt part of terreſtrial animals. When they have depoſited their burdens, they leave their naſcent progeny to provide for themſelves. Fiſhes have different ſeaſons for depoſiting their ſpawn; and this continues in it's egg ſtate in proportion to the ſize of the animal. The young of the ſalmon, for inſtance, continues in the egg from the beginning of December till the beginning of April; the carp continues in the egg only about three weeks; and the little Gold-Fiſh of China is ſtill more expeditiouſly produced. All theſe, when excluded, at firſt eſcape by their minuteneſs and agility. They riſe, ſink, and turn, much readier than grown fiſhes; and, when purſued, they fly for refuge to ſhallow water. But, with all theſe advantages, ſcarcely one in a thouſand ſurvives the numerous perils of it's youth. The very male and female which produced them, forgetting all relationſhip at their departure, are equally dangerous and formidable with the reſt,

Such is the general picture of theſe voracious and inſenſible creatures. But there are ſome Fiſhes, indeed, which poſſeſs finer organs, and higher ſenſations; that nurſe their young with care and tenderneſs, and protect them from all injuries; of which kind are the cetaceous tribe. The cartilaginous kinds, or thoſe which have griſtles inſtead of bones, bring their young alive into the world; and, though incapable of nurſing them, they defend them with activity and courage: but the ſpinous or bony kinds leave their ſpawn without any protection, being ſatisfied with their mere production.

Many volumes have been written on the ſubject of catching Fiſhes, and of rendering them ſubſervient to the ends of luxury; but ſuch ſubjects do not properly fall under the naturaliſt's illuſtration. Apicius is famous for having taught mankind to ſuffocate Fiſhes in Carthaginian pickle; and Quin, the comedian, for inventing a ſauce for the doreé: Mrs. Glaſſe is famous for her eel-pye; and Mr. Tull for his invention of ſplaying carp, to give it a finer flavour. In this manner, our cooks handle the ſubject; while phyſicians aſſure us, that Fiſhes afford very little nouriſhment as food, and that they ſoon corrupt; that they are naturally cold and moiſt, and conſequently produce juices of the ſame kind, which are inefficacious in ſtrengthening the body; that they abound in a groſs kind of oil and water; that they have few volatile particles, and are therefore leſs fit to be converted into the ſubſtance of our bodies. In this diverſity of opinions, it is the moſt rational way for every perſon to follow nature; to eat what experience proves to be agreeable to his conſtitution; and to leave it to doctors and cooks to diſpute about the eſſential qualities of food, the means of promoting luxury, or repelling diſeaſe.

FITCHET. A name ſometimes uſed to expreſs the pole-cat, an animal of the weaſel kind.

FIVE-FINGERED FISH. This ſpecies of fiſh, which is very common in the Eaſt Indian ſeas, receives it's name from five black ſpots on each ſide, reſembling the prints of the fingers. It is about a foot and a half long; it's head is ſmall; it's mouth is large; and it's colour is a ſhining blue mixed with purple. There are no ſcales on the body.

FLAIRS. An appellation given by ſome to the ſkate, a ſpecies of ray.

FLAMBO. A name given by ſome to a long anguilliform fiſh, a ſpecies of the tænia, called alſo cavagiro.

FLAMETTE. An appellation given by the French writers to a ſpecies of chamas, a ſhell-fiſh of the bivalve kind, whoſe ſhells are always in part open. This ſpecies is as hot to the palate as pepper.

FLAMINGO. A very beautiful and ſingular bird, whoſe general conformation and appetites refer it to the crane kind, though it is web-footed like the genus of anſeres. Furniſhed with a longer neck and legs than any other of the crane kind, it ſeeks it's food by wading among waters; and only differs from them in the manner of ſeizing it's prey: for as the heron makes uſe of it's claws, the Flamingo only employs it's bill, which is ſtrong, and well adapted for this purpoſe; while the claws are feeble and uſeleſs.

The Flamingo is a tall, bulky, and moſt beautiful bird. The body, which is of a vivid ſcarlet, is about the ſize of a ſwan; but the legs and neck are of ſuch extraordinary dimenſions, that when it ſtands erect, it is upwards of ſix feet high. The expanſion of it's wings is five feet ſix inches, and it's length four feet eight inches. The head is round and ſmall; the bill is about ſeven inches long, partly of a red colour, partly black, and crooked like a bow. The legs and thighs, which are not much thicker than a man's finger, are about two feet eight inches long; and the neck meaſures nearly three feet. The feet are weak; and the toes are united by membranes; but of what uſe theſe appendages are, does not appear, as the bird is never ſeen ſwimming, it's legs and thighs being ſufficient to carry it into thoſe depths where it's prey is to be found.

This extraordinary bird was once known on all the coaſts of Europe; but is now chiefly found in America. It's magnitude, it's beauty, and the peculiar delicacy of it's fleſh, when young, have afforded ſuch incitements for it's deſtruction, that it has long ſince deſerted the ſhores frequented by man, and taken refuge in countries where the want of population allows it to range in ſecurity. In thoſe deſart regions, the Flamingos live in a

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ſtate of ſociety, and under a polity which excites at once our veneration and wonder.

On the firſt diſcovery of America, and the coaſts of Africa waſhed by the South Sea, the Europeans found Flamingos on ſeveral ſhores of either continent, gentle and unſuſpicious of mankind. In thoſe extenſive ſolitudes, where they had fixed their abodes, they had long enjoyed ſecurity; and knew no enemies, but ſuch as they could either evade or oppoſe. The negroes and native Americans poſſeſſed but few deſtructive arts for killing them at a diſtance; and when the birds perceived the arrows, they contrived a way to avoid them. But when the Europeans beheld ſuch deſireable prey, it was far otherwiſe. Unaccuſtomed to fire-arms, the Flamingos were loſt in amazement, when they ſaw one of their companions fall; they neither tried to avoid their fate by flight nor cunning; and numbers were deſtroyed before the reſt recovered from the conſternation that ſeized them on the firſt attack. At preſent, however, the Flamingo is not only one of the moſt rare, but one of the ſhyeſt birds in the world, and the moſt difficult of approach. They chiefly frequent the moſt deſerted and inhoſpitable ſhores, near ſalt-water lakes, and ſwampy iſlands. In the day-time, they come down to the banks of rivers; and at the approach of night, they often retire to the interior and more mountainous parts of the country. When they ſuffer themſelves to be ſeen by mariners, they always appear drawn up in a long cloſe line of two or three hundred together; and, according to Dampier, exhibit, at the diſtance of half a mile, the exact repreſentation of a long brick wall. But when they ſeek for food, their rank is broken; yet not before they have ſtationed one of their number as a watch, whoſe ſole employment is to obſerve and give the ſignal of danger while the reſt are feeding. As ſoon as this faithful centinel perceives the remoteſt appearance of danger, he ſcreams with a voice as ſhrill as a trumpet, and inſtantly the whole band are on the wing. When feeding at eaſe, they are remarkably ſilent; but, when alarmed, they fill the whole air with intolerable ſcreamings.

Hence it appears, that the Flamingos, having once experienced the tyranny of man, avoid him with the moſt cautious circumſpection: however, this caution ſeems to originate in fear, and not in antipathy; for in ſome villages along the coaſt of Africa, Labat aſſures us, the Flamingos come in great numbers, and take up their reſidence among the natives. There they aſſemble by thouſands, perched on the trees within, and in the vicinity of theſe villages; and the clamour they raiſe is ſo powerful, that it may be heard at the diſtance of a mile. The negroes are much attached to their ſociety; and conſider it as a gift from Heaven, and a protection from accidental calamities. The French who have been admitted to this part of the African coaſt, reluctantly behold ſuch a quantity of game untouched, and rendered uſeleſs by ignorance and ſuperſtition; but they never venture in public to deſtroy thoſe reputed ſacred fowls, leſt their lives ſhould atone for their temerity. In their wild ſtate, the Flamingos are ſometimes ſhot by mariners; but their young, though they run exceſſively faſt, are more frequently overtaken. Labat ſays, he has frequently caught them in nets extended round the places where they breed. When their long legs are entangled in the meſhes, they are then unqualified to eſcape; nevertheleſs, they continue to combat with their deſtroyers, making uſe of all thoſe inſtruments of defence with which nature has ſupplied them. When taken old, they ſtill retain their natural ferocity; they refuſe all nouriſhment; and uſe their bills and claws on every opportunity to annoy their tyrants. The fowlers, therefore, finding it impoſſible to tame them, are compelled to deſtroy them; otherwiſe they pine and die, if left to themſelves in captivity. Their fleſh is black and hard; though, Dampier ſays, well-taſted; but that of the young ones is more agreeable to the eye than to the palate. However, of all other delicacies, the tongues of the Flamingos are moſt celebrated. A diſh of theſe, ſays Dampier, is a feaſt for an emperor. In fact, the Roman emperors conſidered them as the higheſt luxury; and hiſtory informs us, that one of them procured fifteen hundred Flamingos tongues to be ſerved up in a ſingle diſh. The tongue of this bird is certainly very large; but what peculiar flavour it may poſſeſs, we leave to be determined by the profeſſors of epicuriſm. It is probable, that the beauty and the ſcarcity of the bird might be the firſt inducements for ſtudious gluttony to fix on it's tongue as a dainty for the appetite.

When theſe birds migrate from one place to another, they repeat the ſound Tococo, in a very vociferous manner; and hence the Canadian ſavages have given them that appellation. In their flight they appear to ſingular advantage, ſeeming as bright a red as a burning coal. Their manner of feeding is very particular: the bird thruſts down it's head, ſo that the upper convex ſide of the bill only touches the ground; and in this poſition the animal appears, as if it were ſtanding on it's head. In this attitude it paddles and moves the bill about, ſeizing whatever fiſh or inſect happens to come in it's way. For this purpoſe, the upper chap is notched at the edges, ſo that it can hold it's prey with ſuperior ſecurity. Cateſby, however, exhibits a different picture of theſe birds manner of feeding; for, according to him, they thus place their upper chaps undermoſt, and ſo work about, in order to pick up ſeeds from the bottom of the water, reſembling millets: but as in picking up theſe ſeeds they neceſſarily take up great quantities of mud, their bills are ſerrated in ſuch a manner that the ſoil flows out while they ſwallow the grain.

The ſeaſon of incubation depends greatly on the climate in which they reſide: in North America they breed during our ſummer; and on the other ſide of the line they likewiſe chuſe the moſt favourable ſeaſon of the year. They build their neſts in extenſive marſhes, and where they are leaſt obnoxious to the danger of a ſurprize. The neſt is not leſs curious than the animal which builds it; being raiſed from the ſurface of the water about a foot and a half, and formed of mud indurated by the ſun, or the heat of the bird's body. It reſembles a truncated cone in it's figure; and at the top it is excavated in the ſhape of the bird.

The female Flamingo, like all large fowls, lays but a ſmall number of eggs. Her neſt has ſeldom been found to contain more than two; and as her legs are immoderately long, ſhe ſtraddles on the neſt, while they depend on each ſide into the water.

It is a long time before the young are able to fly; and when they are early caught, they are tamed with facility. In five or ſix days they become familiar, eat out of the hand, and drink ſalt-water in abundance. But though they are eaſily domeſticated when young, they are not reared without the

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greateſt difficulty, generally pining away for want of their natural ſupplies. While young, their colours are very different from thoſe lively tints they acquire with age. During their firſt year, they are covered with whitiſh plumage, variegated with grey; in the ſecond year, the whole body is white, with a few ſlight tints of ſcarlet, and the great covert-feathers of the wings are black; the third year equips the bird in all it's deſtined beauty, the plumage of the whole body becoming like ſcarlet, except a few feathers in the wings, which ſtill retain their ſable hue. Of theſe beautiful plumes the ſavages fabricate a variety of ornaments; and the entire ſkins of theſe birds are ſometimes made up into muffs by the Europeans. But ſince we have acquired the art of dyeing feathers of the brighteſt ſcarlet, the value of theſe has been much diminiſhed.

FLAT-FISH. The fiſh ſo called is a native of the Eaſt Indian rivers. It is about a foot long; the mouth is wide; and the ſkin is ſmooth, and without ſcales. The colour of the body is ſilvery; and on the back is a ſmall fin, with one on each ſide. Under the belly likewiſe is a ſingle fin, which ſupplies the place of the tail. This fiſh is excellently flavoured, but ſo extremely full of bones, that it is little valued.

FLEA. A genus of the aptera claſs of inſects, of a roundiſh compreſſed figure.

Few are unacquainted with the agility and blood-thirſty diſpoſition of the Flea; of the caution with which it begins the attack; and the quickneſs with which it avoids the purſuit. This inſect, which not only preys on man, but alſo on the dog, the cat, and various other animals, is found in every part of the world; but in ſome countries it is more plentiful and more troubleſome than in others. In Italy and France it's ſize is increaſed, but it's bite is leſs ſevere than in England; and it would ſeem that it's force increaſed with the coldneſs of the climate; and, though leſs prolific, that it became more predaceous.

When examined with a microſcope, the Flea will be obſerved to have a ſmall head, large eyes, and a roundiſh body. It has two ſhort antennæ, or horns, compoſed of four joints; and between theſe lies it's trunk, which it buries in the ſkin, and through it imbibes the blood in large quantities. It's body appears to be curiouſly ornamented with a ſuit of poliſhed ſable armour, neatly jointed, and beſet with a multitude of ſharp ſpines, almoſt like the quills of the porcupine. It's legs are ſix in number; the joints of which are ſo adapted, that it can fold them up one within each other; and, when it leaps, they all ſpring out, whereby it's whole ſtrength is exerted, and it's body raiſed above two hundred times it's own diameter.

The generation of this familiar vermin, which was firſt diſcovered by Signior Diacinto Ceſtone, affords ſomething very curious. Fleas bring forth eggs or nits, which they depoſit on animals that afford them a proper ſafeguard. Theſe eggs being very round and ſmooth, uſually ſlip down till they are detained by ſome inequalities on the cloaths or hairs where they are lodged; and from them are hatched certain white worms which feed on the ſcurfy ſubſtance of the cuticle, the downy matter collected in the piles of cloaths, or other ſimilar ſubſtances. In the ſpace of fourteen days they arrive at a tolerable ſize; become very lively and active; and, if diſturbed, they ſuddenly roll themſelves up in a ball. Soon after this, they begin to creep, like ſilk-worms, which have no legs; and then they ſearch out lurking-places, where they ſpin ſilken threads from their mouths, and with theſe they incloſe themſelves in ſmall round bags or caſes, of a ſnowy white colour internally, but dirty without. In this poſition they remain for a fortnight longer; after which they burſt from their confinement perfectly formed, and leave their exuviæ in the bags.

By keeping Fleas in a glaſs tube, corked at both ends, but ſo as to admit freſh air, their ſeveral actions may be obſerved, and particularly their mode of copulation, which is performed tail to tail; the female, which is conſiderably the largeſt, ſtanding over the male.

The Flea may eaſily be diſſected in a drop of water; and by this means the ſtomach and bowels, with their periſtaltic motion, may be very clearly diſcovered. Lewenhoeck affirms, that he has ſeen innumerable animalcules, of a ſerpentine ſhape, in the ſemen maſculinum of a Flea: be this as it may, it is certain that their teſtis, penis, with the veins and arteries, though minute beyond conception, are yet perfectly diſtinguiſhable.

Nothing, however, is more ſurprizing than the ſtrength of this little inſect. Had man an equal degree of power in proportion to his bulk, the hiſtory of Samſon would be no longer miraculous. A Flea will draw a chain an hundred times heavier than itſelf; and, to compenſate for this force, will eat ten times it's own ſize of proviſion in a ſingle day.

FLEA, WATER, ARBORESCENT. This inſect, the monoculus of authors, is about the ſize of the common Flea; and appears to the ſight, unaſſiſted by the microſcope, to have but one eye, whence it receives it's claſſical name. However, the fact is, on account of the ſmallneſs of the head, both eyes ſeem united, being ſituated in the trunk of the inſect, which is very ſmall and ſharp-pointed. Examined by the microſcope, the ſtructure of the eye ſeems to be reticulated, or formed like a net.

Inſects of this kind, which are of a blood-red colour, are ſometimes ſeen in ſuch multitudes on the ſurfaces of ſtagnant waters, as totally to change their colour; and hence many fanciful people have concluded that they were turned into blood.

Swammerdam informs us, that a certain renowned profeſſor of Leyden was for a time much aſtoniſhed by an appearance of this kind. Being very intent on his ſtudies, he heard a confuſed noiſe; of which, as it ſeemed to increaſe by degrees, he was deſirous of diſcovering the cauſe by means of his ſervant; who, on his return, appeared almoſt petrified through fear, and told his maſter, in a tremulous voice, that all the waters of Leyden were turned into blood. On this the gentleman proceeded directly to the water thus diſcoloured, and poured ſome of it into a glaſs; and after viewing it attentively, he obſerved that it abounded with an infinite number of theſe little red inſects, which had turned the whole fluid into that ſanguineous colour.

This inſect is particularly curious on account of the formation of it's arms, and the motion it makes with them in the water. By means of theſe the little creature can move in a ſtraight line, waving it's arms as a bird does it's wings in the air, ſometimes upwards, at others downwards, ſometimes to the right, and at others to the left; ſtill, however, proceeding in one uniform and regular courſe. By ſtriking the water with it's arms, it can aſcend with great velocity; and, by beating it in a different di-

rection, it can dive with equal facility. As theſe motions are very rapid, the little animal appears as if jumping in the water; it's head always tending to the ſurface, and it's tail ſtretched downwards.

The Water-Flea is produced from an egg, which, when excluded, is carried on the back of the female; and, ſoon after, is ſeen floating round her in the water. At firſt, it exhibits the appearance of a very ſmall whitiſh inſect, endued with a very nimble motion; and, except in colour, it undergoes no change, only continuing to grow larger and redder in proportion to it's age.

Theſe inſects ſometimes remain ſeveral days on the ſurface of the water; and, at other times, they are only ſeen at the bottom; but, whether at the bottom or the ſurface, they are conſtantly in motion. They ſhed their ſkins like moſt other inſects; and theſe exuviæ ſo exactly reſemble the creatures themſelves, that the ſlough may eaſily be miſtaken for the animal.

FLESUS. An appellation uſed by ſome authors to expreſs the flounder, the paſſer fluviatilis of naturaliſts in general.

FLITTER MOUSE. A name ſometimes given to the common bat.

FLORUS. An appellation given by Aldrovandus, and ſome other naturaliſts, to the bird generally known in England by the name of the whinchat; a kind of the œnanthe, or fallow-finch.

FLOUNDER; the pleuronectes fleſus of Linnæus. This fiſh may be eaſily diſtinguiſhed from any other of the ſame genus by a row of ſmall ſharp ſpines ſurrounding it's upper ſides, placed juſt at the junction of the fins with the body. The upper part of the body is of a pale brown colour, ſometimes marked with a few obſcure ſpots of dirty yellow; and the belly is white. A variety of this Flounder is ſometimes found with the eyes and the lateral line on the left ſide; of which Linnæus makes a diſtinct ſpecies, called pleuronectes paſſer; but, as this fiſh differs from the common kind in no other reſpect, it does not ſeem reaſonable to ſeparate them.

The Flounder is a native of all parts of the Britiſh ſeas; and it even frequents thoſe rivers at a conſiderable diſtance from the ſalt-water; for which reaſon ſome writers have termed it paſſer fluviatilis. In rivers, however, it never attains to any great ſize; but it's fleſh is reckoned ſweeter than that of thoſe Flounders which inhabit the ſea. The weight of the largeſt of this ſpecies ſeldom exceeds ſix pounds.

FLOWER-ROOT WORM. A peculiar ſpecies of Fly-Worms which inhabit the bulbous roots of flowers. Towards the end of autumn, when the roots of narciſſuſes are taken out of the earth, each of them is very frequently found to contain a ſingle worm, which eats and deſtroys them. Such roots as contain theſe pernicious lodgers may be eaſily known, by having ſmall apertures in ſome parts of their ſurfaces, at which theſe deſtructive animalcules entered when ſmall, and which probably ſerve them in a larger ſtate for the purpoſe of reſpiration. The interior parts of theſe bulbs are always found rotten; and the incloſed Worms lie in a kind of brown dirt made by their own liquid excrements, mixed with the fragments of the roots which they have conſumed.

Theſe Worms undergo all their transformations in ſhells formed of their own ſkins, which are of the ſame ovated ſhapes with thoſe of blue fleſh-flies, but conſiderably larger, and of a greyiſh colour. This, however, is not all the difference perceptible between thoſe ſhells; for, on the anterior and ſuperior parts of them are two horns which ſeem intended to convey the air into the corſelet; the old ſtigmata, which ſerved the creature in it's Worm-ſtate, being now obliterated. After having undergone all the neceſſary changes, the ſhell burſts open in the month of April, and emancipates the incloſed fly.

This fly has at firſt the appearance of an humble bee; and, without ſome degree of attention, they are not eaſily diſtinguiſhed. It is covered with black, yellow, and reddiſh hairs, after the ſame manner as the common humble bees; but it's antennæ, which are of the battledore faſhion, plainly prove that it does not belong to the bee kind, even did not it's having only two wings evince the contrary.

FLUDER, or SEA-FLUDDER. A water-fowl of the colymbus or diver kind, deſcribed by Geſner, and ſome other authors, under the title of colymbus maximus. It is nearly of the ſize of the gooſe, and moves very ſlowly either in the water, on land, or in the air. It's beak is long; it's legs are very ſhort; it has a ſhrill voice; and it dives to a prodigious depth. It's feet are webbed; it's back is of a greyiſh colour; and it's belly is white. It very nearly approaches to the northern colymbus, called the lumme, differing only in colour, which in birds is frequently found to be only an accidental variety.

FLUSHER. The common appellation for the leſſer butcher-bird, called by authors the lanius minor, and by Aldrovandus lanius tertius. The beak is long, black, and a little hooked at the extremity; the mouth is internally of a yellow colour; and the tongue is jagged. The middle of the back and the ſmaller wing-feathers are a reddiſh brown; the head and rump are grey; a broad line paſſes on each ſide of the head, riſing from the angle of the beak; the belly is white; the throat and breaſt are whitiſh with a reddiſh caſt; the greater plumage of the wings is mottled with brown and black; and the legs and feet are a deep blueiſh black.

This bird builds in holly-buſhes, and other ſimilar ſituations. It lays ſix oblong egs, white at the ſmaller end, and ornamented with a circle and reddiſh ſpots at the other. It is common in Germany, and in the northern parts of England. See BUTCHER-BIRD.

FLUTA. A name given by Gaza and ſome others to the common ſparus, diſtinguiſhed by Artedi by the appellation of the plain yellow ſparus with a large annular black ſpot near the tail.

FLUTA is alſo a name given by Columella to the muræna of Ariſtotle; which in the Artedian ſyſtem is diſtinguiſhed under the name of the muræna without pectoral fins; a peculiarity evidently and obviouſly marking it from all others of the kind.

FLUVIATILES COCHLEÆ. An appellation given by naturaliſts to thoſe ſpecies of ſhell-fiſh which are never found in ſalt-water. Theſe, though much leſs numerous than ſea-ſhells, are yet of a greater variety and beauty than is commonly ſuppoſed. Such as have already fallen under the examination of conchologiſts may be arranged under their proper genera, in the ſubſequent manner. The univalves comprehend two ſpecies of patellæ; one having a beak at the ſummit of the ſhell; and the other being deſtitute of this appendage,

dage, and as ſmooth as the common patellæ or ſea-limpets.

There are five ſpecies of limaces, or ſnails; there are three ſpecies of the freſh-water neritæ; there is one ſpecies of the trochus; there are three ſpecies of the turbo; ſeven of the buccina; four of the dolia, or conchæ globoſæ; and four of the cornu ammonis.

Of the bivalve freſh-water ſhells, there are five ſpecies of the chamæ, and ſix of the muſcle kind; and of the pecten kind there is only one ſpecies. Naturaliſts have not yet diſcovered a ſingle ſpecies of the multivalve claſs.

To reduce the ſeveral ſpecies to their proper genera, is not very difficult, from a recollection of the characters of each genus of marine ſhells. The limpet is a flat ſhell, elevated into a ſort of cone at the ſummit. In the ſnail kind, if the mouth be round, the ſhell is a true limax; when ſemicircular, the ſhell is a nerita; and, when oval or depreſſed, and the clavicle long, it is then a trochus. The turbo, or ſcrew-ſhell, is known by it's long and ſlender figure. The buccina are long-ſhaped, tailed, and narrow-mouthed; and the dolia are ſomewhat of a ſubgloboſe figure. The cornu ammonis and the umbilicated ſnail are often confounded together by thoſe who obſerve only their external reſemblance among freſh-water ſhells; but in reality they are ſufficiently diſtinct, the cornu ammonis being externally marked with circular ridges, and divided internally into ſeveral ſeparate cells, like the common foſſile kinds; whereas the umbilicated ſnail is of an even external ſurface, and has only one internal cavity: the ſnail alſo has it's mouth placed towards one ſide, and the cornu ammonis in the middle. The chamæ are known by their roundiſh figure, and the muſcles by being oblong; and the pecten is diſtinguiſhed by it's ears and ſtriæ.

FLY. A compleat deſcription of the various claſſes, genera, and ſpecies, of Flies, conſtitutes a very extenſive branch of natural hiſtory. The number of the ſpecies of Flies perhaps exceeds even that of the butterfly; but Flies being generally very minute animals, leſs beautiful and leſs attractive, naturaliſts have not exerted their induſtry to reduce them to ſuch determinate bounds as the former. However, the libellulæ and the cicadæ, in magnitude and beauty, exceed many of the butterfly tribe; and theſe have been obſerved with attention, and deſcribed with accuracy.

In their original ſtate, many Flies are either concealed from our view, or detained among very nauſeous ſubſtances: it is only in their winged ſtate that they become agreeable objects of our reſearches; and it may be proper therefore to begin their general hiſtory in that ſtage, occaſionally deſcending to an enumeration of their previous habitudes and natures, when the lights thrown on the ſubject are ſufficiently clear to direct us.

It is generally believed, but certainly without foundation, that thoſe minute Flies which we obſerve during the vernal ſeaſon will live and grow larger as ſummer advances; but the fact is, Flies, like allother inſects which undergo a metamorphoſis, arrive at their full ſize as ſoon as they become denizens of the ſky; and, having fluttered through their contracted lives, and made proviſion for poſterity, they leave the ſtage of exiſtence to another ſucceſion of animals.

The general and moſt obvious character of Flies, by which they are diſtinguiſhed from other winged inſects, is in being furniſhed with tranſparent wings, totally free from the farina or duſt viſible on thoſe of butterflies; and in having no caſes or covers for them. Thus, by this ſimple character of having tranſparent and naked wings, they are clearly diſtinguiſhed from the butterfly, the beetle, the graſhopper, and other claſſes of winged inſects.

The principal parts or members of which Flies are compoſed are, the head, the corſelet, and the body. To the corſelet the wings are appended; and in the body are contained the ſtomach, the inteſtines, the parts of generation, and a conſiderable part of the tracheæ. The head is uſually united to the corſelet by a very ſhort neck, on which it can often turn as on a pivot. Some Flies indeed have, as it were, the rudiments of two corſelets, one ſeparated from the other; in which caſe, the firſt is uſually very ſmall, and to the ſecond the wings are affixed. The corſelet is the moſt prominent and rounded part of the inſect; it is always poſſeſſed of the greateſt ſtrength, and is frequently the thickeſt: the Dragon-Flies, and ſome water-inſects, are of the kind which have double corſelets, or corſelets divided into two.

The moſt obvious diſtinction for a claſſical arrangement of Flies, is drawn from the number of their wings; ſome having only two, and others four. Yet this plain and obvious diviſion has not always been obſerved by writers on natural hiſtory; and ſome have even neglected to inform us what number of wings belonged to the ſpecies they were deſcribing.

The firſt general diviſion, therefore, of Flies, is into that of the two-winged and the four-winged kinds. A curſory view is generally ſufficient to determine to which of thoſe diviſions a Fly belongs; but if we afterwards examine the inſect with more attention, and conſider the organs by which it receives it's nouriſhment, it may be obſerved that ſome ſpecies are able to protrude this organ to a conſiderable diſtance from their heads; and that, when the Fly is in a ſtate of reſt, it is either folded up, ſhortened, convolved, or laid cloſely down; but, when the creature wants to uſe it, is unfolded, lengthened, extended, or elevated. Naturaliſts have given this organ the name of a trunk: but, in many ſpecies of Flies, this appendage is wanting; and ſuch have only an aperture ſerving for a mouth, ſurrounded with lips and ſome other parts. Some of theſe mouths have nothing analogous to teeth about them; others, however, have teeth, ſaws, or grinders, placed externally, and moveable as in the caterpillar kinds, with which the Flies tear and deſtroy leaves, fruits, and fleſh; and, laſtly, there are alſo ſome Flies to which nature has allotted both a trunk and theſe organs.

Theſe different characters give us very naturally the diſtinctions of four ſubordinate claſſes under the two former general ones. The firſt claſs contains thoſe which are furniſhed with a trunk, but have no teeth or ſaws; the ſecond comprehends thoſe which have a mouth, without any apparent teeth; the third, thoſe which have a mouth furniſhed with teeth; and the fourth, thoſe which have both a trunk and teeth.

All the two-winged Flies belong to the two firſt of thoſe claſſes: the great blue Fleſh-Fly, the ſmall Flies which frequent our houſes, and the gnats, all being provided with trunks without teeth, belong to the firſt claſs; and the Spring-Fly ſo common in gardens, and a ſpecies of Fly reſembling

the

the gnat kind, and having a mouth without any teeth, belongs to the ſecond claſs.

The four-winged Flies, which are extremely numerous, fill up the two remaining claſſes. All the bee kind have a trunk and two teeth; all the waſp kind have a mouth furniſhed with two teeth; and, beſides theſe, there are ſeveral four-winged Flies which have the characters of the ſecond claſs; particularly all the papilionaceous Flies, produced from water tæniæ, which have a mouth without any teeth. Several ſmall four-winged Flies alſo belong to the firſt claſs; ſuch as the flying pucerons, and the falſe pucerons, which have all trunks without teeth; and to this claſs likewiſe the cicadæ are properly referred.

A fifth claſs may likewiſe be eſtabliſhed, but it only comprehends two known ſpecies of Flies; this is ſuch whoſe heads perform the office of trunks. Flies of this kind have very long heads, terminating in a ſort of beak, ſomewhat like the feathered tribe; but this beak has no aperture except at the extremity; nor can the Fly alter it's poſition without altering that of the whole head. At the end of this kind of trunk are placed the teeth, or other organs, with which the inſect collects it's food. The ſcorpion Fly, a very beautiful creature, frequently ſeen ſkipping and leaping about flowers, affords a ſpecimen of this kind.

Subordinate to theſe general claſſes, others are deduced, from whatever forms the moſt obvious and eſſential diſtinction between theſe little animals. The figure of the body often preſents ſuch diſtinctions; and from it three ſubordinate claſſes are formed under the five general ones: the firſt is compoſed of thoſe Flies whoſe bodies are ſhort and broad; the ſecond, of thoſe with long bodies; the third, of thoſe whoſe bodies are faſtened to the corſelet only by a fine filament; and, under all theſe, the ſeveral genera are to be eſtabliſhed from other inferior but conſtant and invariable marks, ſuch as the manner in which they carry their wings, the figures of their antennæ, the poſition of their trunks, and other eſſential variations.

The bodies of Flies being extremely different from each other, even thoſe whoſe general conformation refers them to the ſame claſs, are not without their diſtinctions, by which alone they may be made to eſtabliſh ſubordinate genera. Among the Flies which have ſhort or ellipſoide bodies, ſome are extremely flat and thin; ſuch are thoſe of the Flies produced from worms feeding on the pucerons; and others have the hinder part of the body incurvated in the form of a hook.

In Flies, the extremity of the body is uſually ſmaller than the adjoining parts; but there is a variety found in the neſts of ſwallows, the extremity of whoſe body is conſiderably the largeſt. However, not only the form of the body, but the differences in the filament, by which in many genera it is connected to the corſelet, may furniſh marks for the diſtinctions of the ſubordinate genera. The hinder part of the body may alſo furniſh abundant matter of diſtinction. Thoſe Flies which carry ſtings in their tails, have in that circumſtance alone a ſufficient diſtinction. But, excluſive of thoſe which have ſtings, the females of ſeveral genera have organs placed in the extremities of their bodies, which ſerve as a kind of auger to pierce the body in which they are to depoſit their eggs. Several of the female ichneumons are furniſhed with this kind of inſtrument; and there are others which have a long and ſharp piercer, partly lodged under the belly, or in the body; of which kind are the cicadæ, and many others. Nor is this the only proviſion which nature has afforded theſe creatures for their protection or defence; ſome have a ſerrated organ behind; and others one or more long ſlender filaments, which in their form and ſtructure have ſome reſemblance to the antennæ. The genera of Flies may therefore very properly be diſtinguiſhed by ſuch appendages: the ephemerons, and many other ſpecies among the four-winged Flies, are furniſhed with them; and, among the two-winged kinds, the ſmall Fly, which is the male gall inſect, affords an example of them.

Thoſe Flies which proceed from water-worms, according to their ſeveral ſpecies, preſent ſome varieties to the curious in the manner of their egreſs from their ſhells, when they quit the nymph ſtate, in order to aſſume their laſt and moſt perfect form. The long water-worms, compoſed of many rings, and with funnel-faſhioned tails, conſtructed with apertures for the admiſſion of air, and ſurrounded with a multitude of hairs, retain in their ſhell-ſtate ſo much of their original form, that they are not eaſily diſtinguiſhable. In each of theſe, the nymph occupies only a ſmall part of the cavity; and, in many of them, the Fly is produced perfect in five or ſix days. At the expiration of this time, the nymph, having acquired it's full ſtrength, begins to exhibit the firſt indications of life in attempting to obtain it's liberty. To accompliſh this, nature has ſo provided for the incloſed Fly, that the head is but ſlightly connected to the ſecond ring of the body; but the creature, in this ſtate, not being lodged in that part of the worm, can make no efforts againſt it; all it's exertions are applied to force an aperture in the ſecond ring, like that in the back of the caterpillar's ſkin when it is about to caſt it's exuviæ. For this purpoſe, the incloſed Fly inflates and ſwells it's head; and then thruſts out the bladder from it's anterior part, with which theſe Flies are provided, in this ſtage of their exiſtence, on this very account. When this aperture is effected, the head of the worm is in ſome meaſure ſeparated from the body; and the efforts of the Fly to puſh itſelf forward, finiſh that ſeparation, and leave an opening of a proper ſize for the egreſs of the Fly.

The Flies produced from this ſpecies of worm are liable to conſiderable danger from the element which formerly nouriſhed them; and they are as eaſily drowned as thoſe produced from worms which ſpend their lives on dry land. Theſe Flies, which are of the ſhort-bodied kind, bear a ſtrong affinity to the common great blue fleſh-flies; they have fleſhy trunks furniſhed with lips, and are deſtitute of teeth; but, though thus far the ſimilarity is entire, the characteriſtic diſtinctions are ſufficiently obvious. The firſt is, that the antennæ of this ſpecies are compoſed of granulated filaments; whereas thoſe of the other are of the battledore kind: the wings of the fleſh-fly are not croſſed on the body; whereas thoſe of this fly are. But the moſt conſpicuous variation is, that it has two oblong and ſlender bodies, of a crutaceous ſtructure, inſerted in the upper part of the corſelet, and directed backwards.

Some of the more remarkable ſpecies of Flies are as follow; others are arranged according to their names.

FLY, BREEZE, or GAD-FLY. See GAD-FLY.

Fly, Flower. A ſmall, but very beautiful Fly, deſcribed by Cluſius. The general colour is black; the eyes are white; on the back are ſeven yellow ſpots; and the two wings have a ſilvery appearance.

Fly, Grey, or Trumpet-Fly. This is a pretty large ſpecies: the body is of a duſky grey colour, approaching to black; the breaſt is beſet with a great number of long yellow hairs; the wings are large and tranſparent; the figure of the body is oblong; and the eyes are large and black. The female depoſits her eggs in the noſtrils of ſheep, deer, and ſome other animals. It is called the Trumpet-Fly from a peculiar noiſe it makes during the heat of ſummer; but Linnæus gives it the name of oeſtrus, and refers it to the Gad-Fly genus.

Fly, Hornet. This ſpecies is as large as the common Hornet; and ſo nearly reſembles it, that an incurious obſerver cannot diſtinguiſh the difference. The head is large; the ſnout, which is long and black, has a ſharp point; and the eyes are prominent. The breaſt is large, bunched, and of a duſky colour; but the wings, legs, and belly, are an iron grey; and the upper part of the body, which conſiſts of ſeven joints, is black and yellow.

Fly, Hornet, Virginian. This inſect is equal in ſize to our largeſt Flies: the head and eyes are black, with a white line running from the ſhoulders to the mouth; and the mouth itſelf is armed with a long and ſtrong weapon. The ſhoulders are of a blackiſh brown colour; and it has two ſilver wings. At the back part there are ſeven or eight joints of a whitiſh colour; but the other parts, except the belly, which is of a yellowiſh aſh-colour, incline to black.

Fly, Hornet, Muscovy. This ſpecies has a very long body; and large oblong eyes, which occupy the greateſt part of the head. The ſnout is black, hardiſh, and divided into three parts; and with it the inſect can penetrate cloth, or other ſubſtances of a ſimilar conſiſtence. Linnæus gives the general appellation of aſilus to Flies of this kind; of which he enumerates four ſorts, viz. the rapacious aſilus; the hairy aſilus; the aſilus with round wings; and the aſilus which ſtings the legs through the ſtockings.

Fly, Horse, Common. The body of this inſect is pretty large, and of an oblong ſhape rounded at the extremity; the ſkin is ſmooth; the eyes are large; the wings are tranſparent; and the colour is greviſh. Each of the legs is armed with four ſhort ſharp claws; and the ſnout is clavated, of a cylindrical ſhape, and blunt at the extremity.

Fly, Horse, Great. This ſpecies has a greyiſh head; large black eyes; and broad tranſparent duſky coloured wings marked with iron-grey lines. The breaſt and body are grey, except that a triangular white ſpot extends quite down the back; the thighs are black; and the legs are yellow.

Fly, Horse, East Indian. The bite of this moſt pernicious inſect is very ſevere. It is about two inches long, nearly the ſame in breadth, and of a brown colour, with a yellow ſtreak along the body. This Fly builds it's neſt with great care in the rafters of buildings, where it depoſits it's eggs, and hatches it's young. It feeds on fruit; and, when killed, has a moſt diſagreeable ſmell.

Fly, Horse, Chinese. The body and underwings of this Fly are of a ſhining green colour, which has the brilliance of poliſhed metal; the tips of the wings and the under-ſide are duſky; but the upper wings, which are of a light brown hue, are very thin and tranſparent.

Fly, Horse, Purple and Brown. This ſpecies is a native of the Weſt Indies. It's wings are of a dull purpliſh brown colour variegated with ſome tranſparent ſpots. Linnæus gives theſe Flies the name of hippoboſca.

Fly, Ichneumon, Common. This inſect has a long, ſlender, black body; the head, breaſt, and feelers, are of the ſame colour; the legs are reddiſh, long, and ſlender; and the wings are tranſparent, except that there is a black ſpot near each of their edges. A weapon projects from the tail, longer than the whole body, conſiſting of three filiform rays, the middlemoſt of which is red, and the two exterior ones black. Ray gives this Fly the appellation of the Waſp Ichneumon, with a ſlender, longiſh body, and three very long briſtles at the tail.

Fly, Ichneumon, with Silver-Coloured Wings. This ſpecies has an oblong body, of a black colour, with two black feelers. The wings are marked near their upper edges with blackiſh ſpots; the legs are reddiſh; and from the tail proceed three long hairs. This inſect, which very nearly reſembles the former, has four wings like all the reſt of the genus.

Fly, Ichneumon, Whitish. This ſpecies is entirely white, except four black ſpots on the wings, which the inſect, when ſitting, keeps erect. It has ſix feet, two globous prominent black eyes, and two ſhort black feelers. The body is ſlender, round, and upwards of half an inch long; there are three briſtles at the tail, of equal lengths with the body, which, in the act of flying, the creature ſpreads into a triangular figure. This Fly makes it's appearance in May and June.

Fly, St. Mark. Theſe Flies generally make their appearance about St. Mark's day, when they are ſeen in prodigious numbers. They are ſomewhat ſmaller than the large blue Fleſh-Flies, and have neither trunks nor teeth; but, notwithſtanding this ſeemingly innocent organization, they are very miſchievous, particularly in gardens. They are found about fruit-trees, ſitting on the leaves, and on the flower-buds, which they eſſentially injure, by ſucking the juices of thoſe tender parts, and either deſtroying them before they expand themſelves, or rendering them very weak.

Some writers gravely tell us, that theſe Flies were originally provided with ſtings; but that, being found extremely noxious, St. Mark deprived them of theſe offenſive weapons throughout all generations. Ridiculous as this ſtory may appear, it is firmly believed in many Roman Catholic countries, eſpecially among the vulgar. The mouth of the St. Mark's Fly is of the ſame mechaniſm with that of the tipula, being compoſed of two membranous lateral lips, like the two valves of a ſhell-fiſh, which defend and cover two internal fleſhy lips.

The male may be eaſily diſtinguiſhed from the female by having a much larger head, and reticular eyes which in a manner cover the whole head. The wings of this Fly are ſomewhat longer than the body, and croſſed in ſuch a manner as that one of them entirely covers the other.

The peculiarities attending theſe Flies, when they quit the worm ſtate to enter into that of the chryſalis or nymph, are worthy of obſervation. The worm appears to be in great diſorder, and

gives itſelf various contortions, till at length the ſkin cracks on the ſurface of the back: immediately after which, the anterior part of the nymph appears at the aperture; and thus forcing it's way out by degrees, the head becomes totally uſeleſs, and is therefore left with the ſkin. The laſt tranſformation of this inſect, or the emancipation of the Fly from the nymph ſtate, exhibits nothing very ſingular, being performed in the ſame manner that other animals of the ſame kind undergo theſe important revolutions in their lives.

FLY, WASP. This inſect is as large as the common Waſp, which it ſtrongly reſembles both in ſhape and colour. The head is ſmooth and yellowiſh; the body is blunt; the joints at the edges are a pale yellow; and the ſnout is long and pointed.

FLY-CATCHER. A genus of paſſeres in the Linnæan ſyſtem, including twenty-one different ſpecies; the characters of which are, that the bill is almoſt triangular, bent inwards, notched on both ſides, and beſet with briſtles.

FLY-CATCHER, COMMON, OR SPOTTED; the Muſcicapa Griſola of Linnæus. This bird of paſſage in Great Britain appears in the ſpring, breeds up it's young, and then quits the iſland about Auguſt. It builds it's neſt on the ſides of trees, towards their middle; and, according to Morton's Hiſtory of Northamptonſhire, in the corners of walls, where ſpiders leave their webs. When the young brood are capable of flying, the old ones retire with them into thick woods, where they frolick among the top branches of the trees; dropping from the boughs ſometimes in a perpendicular direction on the Flies that ſport beneath them, and riſing again in the ſame attitude. They feed alſo on cherries, of which they appear to be exceſſively fond.

The head of this bird is large, and browniſh obſcurely ſpotted with black; the back is of a mouſe-colour; the wings and tail are duſky; and the interior edges of the quill-feathers are edged with pale yellow. The breaſt and belly are white; the throat and ſides under the wings are daſhed with red; and the legs and feet are ſhort and black. The bill is broad at the baſe, round which grow ſeveral ſhort briſtles; and it is ridged in the middle.

FLY-CATCHER, PYED; called alſo the COLD-FINCH: the Muſcicapa Atricapilla of Linnæus. This ſpecies is very rare in England. It is ſmaller than the hedge-ſparrow; the bill and legs are black; the forehead is white; the head, cheeks, and back, are black; the coverts of the tail are ſpotted with white; and thoſe of the wings are duſky tranſverſely barred with white. The quill-feathers are alſo duſky; the exterior ſides of the ſecondaries are white, and the interior duſky; the middle feathers of the tail are black, the exterior being marked with white; and the entire under-ſide of the body is white.

The female differs from the male in having a duſky brown head, of which colour likewiſe is the whole upper part of her body; the white in her wings is leſs conſpicuous than in the male; and the under-ſide of her body is a dirty white.

FLY-CATCHER, BLUE. The bill of this bird is black; the crown of the head, the back part of the neck, the back, rump, and covert-feathers of the wings, are blue inclining to ſlate-colour; the tail and quill-feathers of the wings are duſky, but the outer quills are white at their baſes. The throat and ſides of the head are black, and the ſame colour extends from each ſide of the neck to the wings; the covert-feathers under the tail are entirely white; and the legs and feet are of a duſky brown hue. This ſpecies is a native of America, and is probably a bird of paſſage.

FLY-CATCHER, GREEN BLACK-CAP. This bird has a ſlender bill, of a moderate length, incurvated and ſharp at the point, of a duſky colour above, and lighter below; both mandibles, however, being yellowiſh near their baſes. The crown, ſides, and hinder part of the head, are covered with a cap of black plumage, having an angle under each eye; the throat down to the bill, and the whole remaining part of the bird, are of one uniform blue-green colour, except the greater quills of the wings, which become blackiſh at their tips; and the legs and feet are of a dark lead-colour.

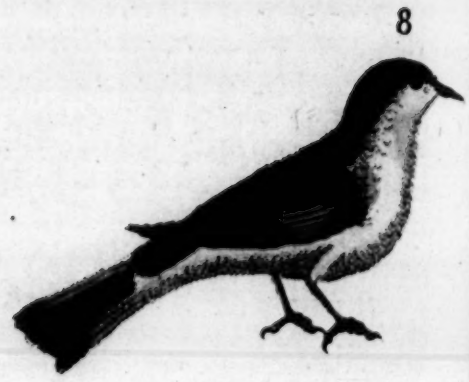
FLY-CATCHER, GREEN, BLUE-HEADED. This ſpecies is a native of Surinam; and the bill reſembles that of the former bird, being of a light cinereous colour above, and dark below. The top and ſides of the head are a light blue; part of the throat under the bill is white; the neck, the entire body, and the tail, are a yellowiſh green; on each ſide of the ſcapulars there is a roundiſh blue ſpot; the covert-feathers and quills reſemble the colour of the body, except the greater quills, which are blackiſh; the under-ſide of the tail is duſky; and the legs and feet are of a faint yellow hue.

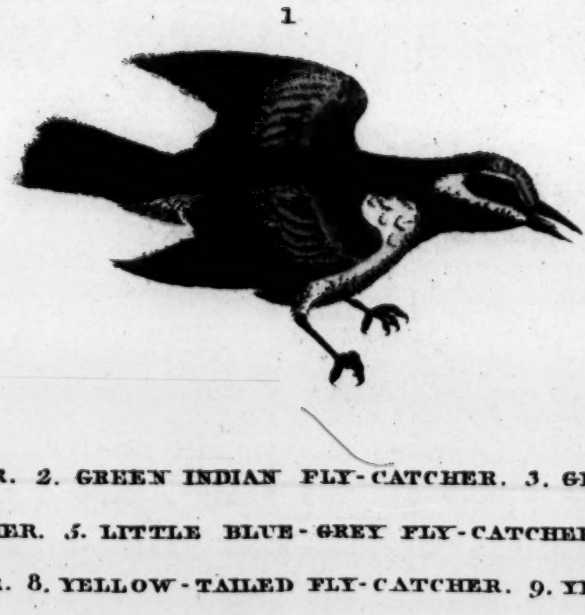
FLY-CATCHER, GREEN INDIAN. This ſpecies has a duſky bill, a little inclining to yellow near the head; the top of the head, the upper ſide of the neck, and the back, are of a dark green colour; the rump and upper coverts of the tail are a lighter green; and the ſides of the head, the throat, breaſt, belly, thighs, and covert-feathers under the tail, are yellow clouded with green. The wings are dark brown, or black; a few of the quills are yellow on the edges of their webs; the firſt and ſecond row of covert-feathers have white tips, which form two tranſverſe bars on each wing; the tail is of the ſame colour as the back; and the legs, feet, and claws, are a dark brown or black. This bird is a native of Bengal in the Eaſt Indies, and was firſt deſcribed by Edwards.

FLY-CATCHER, OLIVE-COLOURED. This bird was firſt imported from Jamaica; where it is known, according to Dr. Browne, by the ſingular appellation of Whip-Tom-Kelly, which words it's note ſeems to expreſs. The bill is ſlender, the point of the upper chap bending downwards, and hanging a little over the lower, of a duſky hue above, and inclining to a fleſh-colour beneath. A duſky line runs from the bill towards the neck; the top of the head, the upper ſide of the neck, and the whole back, wings, and tail, are of a browniſh green or dark olive-colour; and the entire under-ſide, from the bill to the covert-feathers beneath the tail, is of a whitiſh hue a little clouded with light olive. The inner coverts, and the ridges of the wings, are alſo whitiſh; but the inſides of the quill-feathers of the wings, and the under-ſide of the tail, are cinereous. The legs and feet, which are ſimilar to thoſe of other ſmall birds, are blackiſh or duſky.

FLY-CATCHER, YELLOW-RUMPED. The bill of this bird is ſlender, a little incurvated at the point, and of a duſky cinereous colour, but ſomewhat lighter at the baſe. The top and ſides of the head round the eyes are of a cinereous colour, which gradually becomes an olive-green on the hinder part of the neck and back, where there are ſeveral blackiſh ſpots. The throat, breaſt, and

rump,





1. GOLDEN-WINGED FLY-CATCHER. 2. GREEN INDIAN FLY-CATCHER. 3. GREEN BLACK-THROATED FLY-CATCH
4. GREEN BLUE-HEADED FLY-CATCHER. 5. LITTLE BLUE-GREY FLY-CATCHER. 6. OLIVE-COLOURED FLY-CATCHE
7. YELLOW-BREASTED FLY-CATCHER. 8. YELLOW-TAILED FLY-CATCHER. 9. YELLOW-VENTED FLY-CATCHER.

Plate XLIII. Published as the Act directs by Harrison & Co. Aug. 13. 1785.

rump, are a bright yellow; but the breaſt is variegated with elegant black ſpots. The thighs, belly, and covert-feathers under the tail, are white; the wings are of a very dark aſh-colour; the tips of the firſt and ſecond rows of the covert-feathers are white, forming two oblique tranſverſe bars on each wing; the quills next the back are alſo edged with white; and the covert-feathers within-ſide the wings are white. The inſides of the quills are cinereous, with narrow edges of white on their inner webs; the tail-feathers, except the two middlemoſt, which are black, have the central parts of their inner webs white, their tops and bottoms being blackiſh. The covert-feathers on the upper ſide of the tail are of a deep duſky colour; and the legs and feet are alſo duſky. This bird is a native of Pennſylvania, and is alſo probably found in ſeveral of the neighbouring provinces.

Fly-Catcher, Yellow-Tailed. This bird has a brown bill, ſomewhat compreſſed like that of the duck; about the angles of the mouth ſeveral hairs project forwards on each ſide of the bill; the top of the head, and the covert-feathers above the tail, are cinereous; the hinder part of the neck, the back, and the covert-feathers of the wings, are an olive-green; and the quill-feathers are a duſky brown, or blackiſh with an olive caſt. The covert-feathers within-ſide the wings are a yellowiſh white; and the tail-feathers are yellow with dirty brown tips, except the two middle ones, which are entirely a dark brown. The whole under-ſide, from the bill to the tail, is whitiſh with faint ſhades of reddiſh brown on the ſides of the breaſt; the ſides under the wings are yellow; and the legs and feet are a duſky brown.

Fly-Catcher, Yellow-Spotted. The bill of this bird is of a dark brown or duſky colour; the top of the head, the hinder part of the neck, the back, wings, and tail, are a dark greeniſh olive; the greater feathers of the wings and tail are more duſky; and the inner webs of the ſide tail-feathers are white half their lengths from the tips; the ſecond row of covert-feathers of the wings have white tips, and theſe form a white ſpot on the upper part of each wing. The throat, breaſt, ſides, and inner coverts of the wings, are yellow, with ſmall black ſpots down the middles of the feathers; the belly and thighs are a fainter yellow without any ſpots; and lines of yellow paſs from the bill over each eye. The covert-feathers beneath the tail are white; and the legs and feet are a duſky brown. This bird, together with the preceding, are natives of the Weſt Indies.

Fly-Catcher, Golden-Crowned. This bird has a ſlender bill of a blackiſh or duſky colour; from which a broad black liſt croſſes the eye, and extends backwards; and above it there is a narrow black line. The ſides of the head, and the throat beneath the black liſt, are white; the hinder parts of the head and neck, and the back and covert-feathers above the tail, are blueiſh, with duſky ſpots down the centres of the plumage. The upper part of the breaſt is black with a ſmall admixture of grey; on the crown of the head there is a ſpot of bright yellow; and the ſides of the breaſt below the black bar, and the rump, are of the ſame beautiful colour. The wings are duſky, with grey edges; the tail, which is compoſed of twelve feathers, is duſky or blackiſh; the belly, thighs, and covert-feathers under the tail, are white ſpotted with black; and the legs, feet, and claws, are duſky. This ſpecies is a native of Pennſylvania.

Fly-Catcher, Golden-Winged. The bill of this bird is ſtraight, ſharp-pointed, and black; from the angle of the mouth a broad black liſt paſſes through the eye; and above and below there are white lines. The throat is black; the breaſt, belly, thighs, and covert-feathers beneath the tail, are white; the top of the head is a bright yellow; and the upper ſide of the neck, the back, the rump, and the leſſer coverts of the wings, are a light blueiſh ſlate-colour; the quills and the upper ſide of the tail are a dark cinereous; the exterior webs of the firſt row of outer feathers of the wings are yellow, as well as the tips of the feathers next above theſe, which, when united, form a ſpot of bright yellow on each wing. The interior coverts of the wings are white; the under-ſide of the tail is aſh-coloured; and the legs and feet are duſky.

Fly-Catcher, Green, Black-Throated. This bird has a ſlender bill, ſharp-pointed, and black; the ſides of the head and part of the neck are a fine bright yellow; the throat is black; and the crown of the head, the neck, back, rump, and leſſer coverts of the wings, are of a green olive colour. The wings and tail are a dark cinereous, except the tips of ſome of the wing-feathers, which are white; the breaſt is yellowiſh; the belly, thighs, and coverts beneath the tail, are white; and the legs and feet are duſky. This ſpecies is a bird of paſſage in Pennſylvania.

Fly-Catcher, Red-Throated. This bird has a ſlender black bill; the crown of the head is yellow; and a black mark paſſes from the angle of the bill under the eye. The hind part of the head is black; the ſides of the head, part of the throat, the belly, thighs, and covert-feathers under the tail, are white; the lower part of the throat is of a dark reddiſh hue, which colour divides and paſſes under each wing; the back, rump, and upper ſides of the wings, are duſky, bordered with a lightiſh green colour, except the two principal rows of covert-feathers of the wings, which are deeply tipped with white, forming two light bars acroſs each wing. The covert-feathers within-ſide the wings are white; the tail is blackiſh on it's upper ſide; and the legs and feet are black.

Fly-Catcher, Little Blue Grey, of Edwards. The bill of this bird is black, except the lower mandible, which is reddiſh at the baſe; the top and ſides of the head, the upper ſide of the neck, the back, rump, and upper ſide of the tail, are all of a blueiſh ſlate-colour; from the noſtrils a black arched mark paſſes over the eye to the hinder part of the head; the wings are externally of a browniſh aſh-colour, longitudinally marked with white; the two exterior feathers on each ſide of the tail are white; the whole under-ſide, from the bill to the tail, is of the ſame colour; and the legs and feet are black. This bird is a native of the United States of America.

Fly-Catcher, Yellow-Vented. This ſpecies, which is a native of the iſland of Java, has a black bill, and a black front and creſt. The neck, the ſides of the breaſt, and the belly, are white; the back and wings are brown; the coverts of the tail are white; the vent is yellow; the tail is long, duſky, and barred near the extremity with white; and the legs are duſky.

Fly-Catcher, Yellow-Breasted. This bird, which is about the ſize of the gold-finch, inhabits the iſland of Ceylon, where it is much admired for the ſweetneſs of it's note. The bill is grey; the head and cheeks are black; the back and coverts

verts of the wings are a cinereous brown daſhed with a pale yellow; the primaries and the tail are duſky edged with a pale yellow; the breaſt and belly are a fine light yellow; and the legs are a pale blue.

FLY-CATCHER, BLACK AND WHITE. This ſpecies has a ſtraight bill, ſlender, ſharp-pointed, and black. Round the baſis of the upper mandible are a few black hairs pointing forwards; the forehead, and the ſpaces round the eyes, are white; and the entire under-ſide, from the bill to the coverts of the tail, is of the ſame colour. The top of the head, the upper ſide of the neck, the back, wings, and tail, are black, except that the tips of the tail-feathers are white. The rump, and the coverts on the upper ſide of the tail, are white, with a ſmall admixture of brown; and the legs and feet are black. This bird was imported from Surinam.

FLY-EATER. The name of a Weſt Indian ſpecies of lizard about the length and thickneſs of a man's finger. The males are green; and the females are grey, and inferior in ſize to the males. They feed on flies, which they purſue with ſo much eagerneſs, that they frequently leap from the tops of trees in purſuit of them. In patient expectation of ſeeing their prey, they ſometimes lie ſtill for twelve hours or more ſucceſſively, till a favourable opportunity preſents itſelf of gaining their aim, when they leap on the inſects, and ſwallow them up in an inſtant.

Theſe lizards are ſo numerous in ſome of the Leeward Iſlands, that there is ſcarcely a tree to be found which does not contain ſome of them; and even the houſes of the natives are extremely infeſted by them.

FLYING CAT. A large ſpecies of bat found in the Eaſt Indies. See CAT, FLYING.

FLYING DOG. An animal of the bat kind found in the iſland of Ternate, ſo called from it's ſuppoſed reſemblance to the dog. The fore-feet are very long, and furniſhed with five toes, which aſſiſt the creature in extending it's wings; the fifth toe, which is diſtinct from the reſt, reſembles a man's thumb, and is armed with a ſharp crooked claw, with which the animal can ſuſpend itſelf at pleaſure. The hind-feet likewiſe have five toes, armed with crooked ſharp claws; and it has no tail.

In New Spain, there is another creature of the bat kind known by the ſame appellation; but the deſcription given of it by naturaliſts is ſo incompleat, that it is impoſſible to determine with what ſpecies of bat it correſponds.

FLYING FISH; the Exocætus Volitans of Linnæus. This fiſh, which is alſo called the adonis, hirundo, and mugil alatus, in the form of it's body reſembles the herring, but the back is flat; the ſcales are large and ſilvery; the dorſal fin is ſmall, and placed near the tail; the pectoral fins, the inſtruments of flight, are almoſt as long as the body; the tail is bifurcated; the belly is white; and the upper ſurfaces of the wings are of an olive-colour beautifully ſpotted near their edges with blue. This fiſh is common in the Mediterranean and ſome other ſeas; but is ſeldom found in the Britiſh, or in any of the northern ſeas. It leads a moſt wretched life in it's native element, being perpetually harraſſed by the dorados, and other fiſh of prey; and, if it endeavours to avoid them by having recourſe to the air, it either meets it's fate from the gull or the albatroſs, or ſinks down again into the mouths of the finny race which watch it's aerial excurſion below. Whole ſhoals of theſe creatures frequently fall on board thoſe ſhips which navigate the ſeas of warm climates; and hence it is apparent, that nature has ſupplied them with inſtruments which frequently bring on that deſtruction they ſtrive to avoid, by having recourſe to an element which they cannot long enjoy.

It appears that the ancients were acquainted with this ſpecies. Pliny mentions it under the name of hirundo, and ſpeaks of it's flying faculty; and it is probable that Oppian intended the ſame by his okeiai chelidones, or the ſwift ſwallow-fiſh. What Athenæus and the laſt-cited author mean by the exokoitos and adonis, is not ſo clear: they aſſert that it quits the water, and ſleeps on rocks, from whence it tumbles with precipitation when diſturbed by unfriendly birds; and on theſe accounts ichthyologiſts ſeem to have made it ſynonymous with the Flying-Fiſh.

FLYING-FISH is alſo an appellation given to a fiſh of the gurnard kind. See GURNARD.

FOAL. The young of the horſe kind. Among dealers, the word Colt is generally applied to expreſs the male kind, and Filly the female. See HORSE.

FOETUS. The child, while yet contained in the mother's womb; but particularly after it is perfectly formed; till which time it is more properly denominated an embryo.

FONG-WHANG. The Chineſe appellation for a very beautiful bird peculiar to that country; which, if we may give credit to the natives, is the moſt elegant of all the feathered tribe: but as no European has hitherto had an opportunity of deſcribing it's real nature, qualities, colours, and proportions, we forbear to publiſh exaggerated, and perhaps fabulous accounts.

FORDICH TROUT. This fiſh, which is almoſt as large as the ſalmon, continues nearly nine months of the year in the ſea; and hence we may naturally infer, that it is of a different ſpecies from the common trout. Beſides this, it is ſeldom caught with an angle in freſh water; nevertheleſs, it's return to the rivers it frequents is ſo very conſtant and uniform, that fiſhermen can almoſt fix on a certain day when it may be expected. This fiſh, though generally called a trout, is, perhaps, more properly a variety of the grayling. See GRAYLING.

FORFICULA. See EARWIG.

FORFICULA MARINA; the Sea Earwig. An inſect frequently found near the ſea-ſhores, having ſome degree of external reſemblance to the common earwig, particularly in it's ſize. The colour is an admixture of deep black and ſilvery white; the ſhoulders are ſomewhat gibboſe; the eyes ſtand cloſe to each other on the ſummit of the head; and the antennæ are long and ſlender. It has eight pair of legs on the anterior part of the body, and eight pair more on the hinder part, with three or four briſtles at the tail. This animalcule lives among rocks and ſtones, and moves with prodigious ſwiftneſs.

FORK-BEARD. An appellation ſometimes given to the forked hake. See HAKE.

FORK-TAIL FISH. This fiſh, which is caught in the oriental ſeas, has a long round body, and a very long forked-tail; from whence it receives it's name. It's head reſembles that of the herring; on it's top there is a long barb or briſtle; and below the mouth there are two more, which the

the animal keeps close to the body when in the act of swimming. It grows to the size of the mackerel; but it's flesh is not much esteemed.

Fork-Tail, among fishermen, is also expressive of the salmon in it's fourth year, while it has not yet attained it's full growth.

FORMICA. See Ant.

FORMICA LEO; the Ant-Lion. A remarkable insect which, in it's prior or creeping state, shews amazing address in catching it's prey; and, in it's perfect or winged state, approaches to the nature of the libellulæ or dragon-flies. See Ant-Lion and Dragon-Fly.

FORNA. An appellation given by Hildegard and others to the trout.

FOSSANE. An animal of the weasel kind, about the size of the cat. It's body, which is slender, is covered with ash-coloured hair mixed with tawny; four black lines extend from the hinder part of the head towards the back and shoulders; the shoulders, sides, and thighs, are black; the whole under-side of the body is of a dirty white hue; and the tail is semi-annulated.

This animal, which inhabits Madagascar, Guinea, Cochin-China, and the Philippine Isles, is fierce and untractable; it destroys poultry in abundance; and it's flesh, when young, is reckoned excellent food. The natives of Guinea call it the barbe; and the Europeans who frequent that coast, the wine-bibber, on account of the fondness it shews for palm-wine.

Fossane, Leverian. This variety has a white spot on each side of the nose, and another beneath each eye; the remainder of the nose, the cheeks, and the throat, are black; the ears are very large, upright, rounded, thin, naked, and black; the forehead, the sides, thighs, rump, and upper part of the legs, are cinereous; the back contains many long black hairs; and on the shoulders, sides, and rump, are dispersed some black spots. The tail, towards the end, is black, but near the base, mixed with tawny slightly annulated with black; and the feet and claws are white.

This species is of the size of the genet, to which it bears a strong resemblance; and it's tail is as long as it's whole body.

Fossane, of Brooks. This species has a grey nose, marked with a little brown; the mouth and jaws are white, with a dark brown spot on each side; the eyes resemble those of the cat; and the ears are rounded, and of a fleshy colour. The head is grey mixed with tawny; and the forehead is marked with a brown line. The body is likewise grey and tawny, having a dark brown line along the ridge of the back reaching to the tail; and the sides are grey, adorned with lines of very dark brown olive spots. The belly and feet are white; and the tail is long and grey, with blackish or dark brown rings.

FOSSORES. A species of small worms hatched from the eggs of flies which feed on the parenchymatous substance of the leaves of plants, burying themselves between the two membranes. Reaumur gives these animals in general the name of ascarides; but as they greatly differ in their size, and in the manner of their eating and destroying the leaves, the small ones, which eat but slowly, and gnaw their way in crooked furrows, are distinguished by the appellation of Fossores parvi; and, on the contrary, those which are larger and more voracious in their way of living, are called Fossores magni.

FOUMART. A provincial appellation for an animal of the weasel kind, called also the fitchet and pole-cat. See Pole-Cat.

FOURMILLIER. A name given by Buffon to the myrmecophaga didactyla of Linnæus, or the little ant-eater, the lesser yellowish tamandua, or the white American coati. This animal has a conic nose, bending a little downwards; small ears hid in the fur; two hooked claws on the fore-feet, and four on the hind. The head, body, limbs, and upper part and sides of the tail, are covered with long, soft, silky hairs, of a yellowish brown colour; and the tail is thick at the base, and tapers to a point. This animal inhabits Guiana, and climbs trees in search of those ants which build their nests in the branches. See Ant-Eater.

FOWL. This term, when taken in a general sense, is of similar import with Bird; but, in a limited view, it more peculiarly signifies the larger kinds of birds, both wild and domestic, which are either reared or pursued for the purposes of food. In this sense, Fowl includes turkies, geese, ducks, pheasants, partridges, pigeons, cocks and hens, and a variety of other birds. Our common poultry were originally brought from India and Persia. Aristophanes calls the cock the Persian bird; and says, that it was known in that country before Darius and Megabyzus. These birds are now found wild in the isle of Tinian, and other islands of the Indian Ocean; and in this state their plumage is black and yellow, and their combs and wattles purple and yellow. They were certainly denizens of Britain before the arrival of the Romans; for Cæsar informs us, that they were one of the sorts of food forbidden to the natives. It seems probable that the Phœnicians, who traded to Britain about five hundred years before Christ, first introduced them into this country. As to the other domestic Fowls, (turkies, geese, and ducks, excepted) we seem to be indebted for them to the Romans; but the Wild-Fowl were our own from the earliest periods.

FOX. An animal of the dog kind, which it exactly resembles in it's internal conformation. It is a crafty, lively, and libidinous creature; breeding only once a year, unless some accident deprives it of it's first litter; and generally producing four or five cubs, which, like puppies, are brought forth blind. The female goes with young about six weeks; and though it is a generally received opinion that this animal will not generate with the dog kind, late experiments and observations have proved it to be an erroneous one. Buffon indeed was unsuccessful in attempting to bring about an union of the two species; but what failed when pursued on mechanical principles, has frequently been effected by nature.

The Fox is smaller and more slender than the wolf, though it's general conformation is the same: the former is about two feet three inches long, and the latter three feet and a half. The tail of the Fox is longer in proportion, and more bushy; it's nose is smaller, bearing a stronger resemblance to that of the grey-hound; and it's hair is softer: but it's eyes, like those of the wolf, are obliquely placed; it's ears have a similar direction; and, in proportion to it's size, it's head is equally large. From the dog this animal differs in a more essential manner: it's strong, offensive smell, is peculiar to the species; it's habits and pursuits are by no means correspondent with those of the dog; and, though marked with few internal variations, and fewer ex-

ternal ones, the kinds are extremely diſtinct, though no deſcription can give the juſt diſcriminations.

The Fox has ever been famous for his cunning and artifices; and he in a great meaſure merits the reputation he has acquired. Without attempting to oppoſe either the dogs or the ſhepherds, without attacking the flock, or alarming the village, he finds an eaſier way of ſubſiſtence, and gains by addreſs what is denied to his ſtrength or courage. Prudent, patient, and vigilant, he waits the opportunity of depredation, and varies his conduct on every occaſion. Self-preſervation ſeems to be his actuating principle; for, though nearly as indefatigable, and actually more ſwift, than the wolf, he does not entirely rely on either, but forms himſelf an aſylum, to which he may retire in caſe of neceſſity, where he ſhelters himſelf from danger, and rears his young.

It is almoſt invariably true that, among the human race, thoſe who lead a domeſtic life are more civilized, and more endowed with wiſdom, than ſuch as wander from place to place: thus, among the inferior ranks of animated nature, we may ſuppoſe that thoſe who take poſſeſſion of an home, poſſeſs a ſuperior degree of inſtinct. The choice of ſituation, the art of making it convenient, of concealing it's entrance, and ſecuring it againſt more powerful animals, are all ſo many indications of induſtry and ſagacity. The Fox poſſeſſes all theſe qualities in an eminent degree, and turns them to his advantage. He generally keeps his kennel at the edge of a wood, and yet within an eaſy journey of ſome farm-houſe or cottage: from thence he liſtens to the crowing of the cock, and the cackling of the domeſtic fowls; he ſcents them at a diſtance; he ſeizes his opportunity, conceals his approaches, creeps ſlily along, attacks his prey, and ſeldom returns without his booty. If he gets into the farm-yard unmoleſted, he begins to level all the poultry without remorſe; and, carrying off a part of the ſpoil, hides it at ſome convenient diſtance, and then returns to the charge. In this manner, he brings them one by one, and thruſts them into the earth with his noſe; and afterwards, at his leiſure, he hides them more compleatly, by covering them with looſe earth; in which condition they remain till the calls of hunger ſtimulate him to pay them another viſit. The ſame arts are practiſed by him when he finds birds entangled in ſpringes laid for them by the fowler; he very expertly liberates them from the ſnares, hides them for a few days, and knows exactly when and where to avail himſelf of this buried treaſure. He is equally alert in ſeizing young hares and rabbits, before they have ſufficient ſtrength to eſcape from him; and, when the old ones are wounded and fatigued, he ſeldom fails to diſcover them in their moments of diſtreſs, and to render them his prey. He likewiſe ſearches out for birds neſts; ſeizes the partridge and the quail while ſitting; and deſtroys a large quantity of game. The wolf, indeed, is the moſt injurious to the peaſant; but the Fox to the gentleman. In ſhort, nothing which can be eaten ſeems to come amiſs to him; rats, mice, ſerpents, toads, and lizards, all become the prey of this unfeeling glutton. When urged by hunger, he will even feed on vegetables and inſects; and thoſe Foxes which live near the ſea-coaſts, for want of more deſireable food, will eat crabs, ſhrimps, and ſhell-fiſh. In vain does the poor hedge-hog roll itſelf up in a ball, to oppoſe him; this determined plunderer never deſiſts from teazing the poor animal, till it is obliged to extend itſelf, when he inſtantly devours it. Waſps and wild bees are attacked with equal ſucceſs: though at firſt they fly out on their invader, and actually oblige him to retire, their triumph is but ſhort; for the Fox, rolling himſelf on the ground, cruſhes ſuch as ſtick to his ſkin; and then returning to the charge, by unremitted perſeverance, and a repetition of the ſame expedient, he obliges them to abandon their combs, and then eagerly devours both wax and honey.

The chace of the Fox is more pleaſant and amuſing, and requires leſs preparation, than that of the wolf. As dogs have a natural repugnance to purſue the wolf, ſo they are equally alert in the chace of the Fox, preferring it even to the hare or the buck. The inſtant the Fox perceives himſelf purſued, he makes for his kennel, and takes refuge at it's bottom, where for a ſhort time he loſes the cry of his enemies; but the whole pack ſoon reaching it's mouth, redouble their vehemence and rage; and the little tarrier, which is uſually an aſſociate in the chace, boldly ventures in. It frequently happens that the kennel is formed under a rock, or among the roots of old trees; and in ſuch caſes the Fox cannot be dug out, nor is the tarrier able to contend with him at the bottom of his hole. By this prudent ſelection of ſituation, he generally remains ſecure; but as this choice is rather accidental than intended, he is commonly dug out; and then the hunters uſually carry him in a bag to ſome open country, and there liberate him before the expectant hounds. The hounds and the hunters eagerly purſue; the former from an innate principle, and the latter under the impulſe of a temporary frenzy, which agitates the body, and prevents the mind from making any reflection on the futility of the purſuit. What adds to this entertainment, is the ſtrong ſcent the Fox leaves, which always keeps the hounds in full cry; but though his ſcent is much ſtronger than that of the hare, it is much ſooner evaporated. His various ſhifts to eſcape, when every retreat is cut off to his kennel, are ingenious and ſurprizing: he always chuſes the moſt ſylvan ſhades, and purſues thoſe paths which are entangled with thorns and briars; he does not double, nor adopt any of the unavailing efforts of the hare; but flies in a direct line before the hounds, where the ſcent is leſs liable to remain; and, at laſt, when overtaken, he defends himſelf with deſperate obſtinacy, and fights with ſilent courage to the very laſt gaſp.

The firſt year, the Fox is called a cub; the ſecond, a Fox; and the third, an old Fox. He is eighteen months, or two years old, before he arrives at his full ſize and perfection; and, if unmoleſted, will live from twelve to fourteen years.

As the Fox is inimical to all other animals, ſo the various tribes of nature, which in any degree poſſeſs his ſtrength, are at variance with him. The dog, as already obſerved, hunts him with peculiar acrimony; and the wolf, which is a ſtill more potent and neceſſitous enemy, purſues him to his very retreat. Some authors gravely inform us, that the Fox, in order to keep the wolf at a diſtance, lays at the mouth of his kennel a certain herb, to which the other has a particular averſion. This fabulous ſtory, however, at leaſt implies, that theſe two animals are as inimical to each other as they are to all the reſt of animated nature.

But the Fox is not hunted by quadrupeds alone: for thoſe birds which know him to be their implacable

placable enemy, attend him in his excurſions, and give each other warning of his approach. The daw, the magpie, and the blackbird, conduct him along, perching on the hedges as he creeps below, and by their cries and notes of hoſtility apprize other animals of their danger; a caution which they perfectly underſtand, and immediately put in practice. Even the hunters themſelves are often informed by thoſe birds of the place of his retreat; and accordingly ſend their dogs into thoſe thickets where they are particularly noiſy and querulous. Thus is it the fate of this petty plunderer to be deteſted by every rank of animals; all the weaker claſſes ſhun him, while all the ſtronger ones purſue him.

Among the various tribes of wild animals, none are more ſubject to the influence of climate than Foxes; and there are found almoſt as many varieties in this kind as in any of the domeſtic animals. The generality of Foxes, it is well known, are red; but there are ſome of a greyiſh caſt; and Buffon aſſerts, that the tip of the tail in all the Fox tribe is white, though this peculiarity certainly does not always exiſt in this country. In Great Britain we only meet with three varieties of this animal; and theſe are rather eſtabliſhed on a diverſity of ſize than of colour or form. The greyhound Fox, which is the largeſt, talleſt, and boldeſt, will attack a full-grown ſheep; the maſtiff Fox is leſs, but more ſtrongly built; and the cur Fox, which lurks about hedges and out-houſes, is the ſmalleſt, and moſt common, as well as the moſt deſtructive of the three to peaſants and farmers.

In the hyperborean regions, Foxes are found of all colours; black, blue, grey, iron-grey, ſilver-grey, white, white with red legs, white with a black head, white with a black tip to the tail, red with the throat and belly entirely white, and ſometimes with a ſtripe of black running along the back, and another croſſing it at the ſhoulders. The common kind, however, is more univerſally diffuſed than any of the former; being found in Europe, in the temperate climates of Aſia, and alſo in America; but they are very rare in Africa, and in the countries lying under the torrid zone. The furs of ſome of the foreign Foxes are peculiarly eſteemed: the ſkins of blue Foxes are very ſcarce and valuable; but, of all others, thoſe of black Foxes are moſt eſteemed, one of which often ſells for forty or fifty crowns. The hair of theſe animals is ſo diſpoſed, that it is impoſſible to tell which way the grain lies; for if the ſkin is held by the head, the hair falls towards the tail; and, if it is held by the tail, it hangs down equally ſmooth and even to the head.

Fox, Common. This ſpecies has a ſharp noſe; lively hazel-coloured eyes; ſharp, erect ears; and a long, ſtraight, buſhy tail, tipped with white. The body is a tawny red, mixed with aſh-colour; and the fore-part of the legs is black. But the creature is ſubject to conſiderable variations in colour: it's voice is a kind of yelp, and not a bark; and it's bite, like that of the wolf, is very ſevere and dangerous.

Fox, Cross. This variety has a black line paſſing tranſverſely from ſhoulder to ſhoulder, and another along the back to the tail. Croſs Foxes inhabit the moſt frigid climates of Europe, Aſia, and North America: their furs are thicker and ſofter than thoſe of the common ſort; and great numbers of their ſkins are imported from Canada.

Fox, Black. This creature is the moſt cunning, as well as moſt valuable, of all the vulpine tribe. It's ſkin is more highly eſteemed in Ruſſia than the fineſt ſables. It inhabits the northern parts of Aſia and North America; but thoſe ſkins which are imported from the latter, are of an inferior quality.

Fox, Brant. Geſner and Linnæus deſcribe this Fox as being of a fiery redneſs: the former calls it brand-fuchs; and the latter, brandraef. One of theſe animals, which was kept in an Engliſh menagery, was ſcarcely half the ſize of the common Fox; the noſe was black, and much ſharper; the ſpace round the eyes was ferruginous; the forehead, back, ſhoulders, ſides, and thighs, were mixed with red, aſh-colour, and black, the aſh-colour being predominant; the belly was yellowiſh; and the tail was black above, red beneath, and cinereous on the ſides. This creature was imported from Pennſylvania; and appears to be allied to the karagan, a ſmall ſpecies very common in all parts of Great Tartary.

Fox, Corsak. This animal, which inhabits the deſarts beyond the Yaik, and from the Don to the Amur, lives in holes, howls, barks, and burrows deep. Forty or fifty thouſand of theſe creatures are generally caught by the natives of thoſe countries yearly, by means of falcons and greyhounds; and their ſkins are ſold to the Ruſſians, at the rate of forty kopeiks, or twenty-pence ſterling, each. They likewiſe export conſiderable numbers of their ſkins into Turky, uſing them inſtead of money.

This ſpecies has upright ears, ſoft downy hair, a buſhy tail as long as the whole body, a white throat, and yellowiſh green irides. In ſummer, it's colour is a pale tawny; and, in winter, grey. The baſe and tip of the tail is black; and the other parts are cinereous. This ſmall ſpecies is confounded by Buffon with the arctic Fox.

Fox, Arctic. The hair of this ſpecies is ſofter than that of the common Fox; and the tail is ſhorter and more buſky. Some of theſe animals are blue; and others are white at one ſeaſon of the year, and greyiſh and brown at another. The hair is much longer in winter than in ſummer, as is uſual with reſpect to thoſe animals which inhabit cold climates. The noſe is ſharp; the ears are ſhort, rounded, and almoſt hid in the fur; the legs are ſhort; and the toes are entirely covered with fur, like thoſe of the hare.

The Arctic Fox is very common in all the northern countries bordering on the Icy Sea, and is ſeldom ſeen in more propitious climates. It is principally found in the mountainous and barren regions of Norway, Siberia, and Lapland, where it burrows under ground, and ſtrews the bottom of it's kennel with moſs. In Greenland and Spitzbergen, it lives in the cliffs of rocks, being prevented from burrowing by the inſuperable barrier of froſt; and two or three pair generally inhabit the ſame hole. About Ladyday they copulate, during which time they continue in the open air; after which they take to their holes, and go with young nine weeks. Like dogs, they continue united in the act of copulation, and bark like theſe animals; for which reaſons the Ruſſians call them peſzti. They poſſeſs all the cunning of the common Fox; prey indiſcriminately on the young of all aquatic fowls before they can fly; on grouſe and hares, and even on the eggs of birds. In Greenland, they are compelled by neceſſity to ſubſiſt on berries, ſhell-fiſh, or any ſubſtances which the ſea caſts forth; but their principal food in the

north

north of Aſia, and in Lapland, is the leming. Thoſe of the laſt-mentioned countries are extremely migratory, purſuing the leming, a very wandering and deſtructive animal, which makes it's appearance in certain countries once in the ſpace of ſeveral years. On theſe occaſions the Arctic Fox deſerts it's uſual haunts for three or four years ſucceſſively, and returns again when it's prey begins to fail. The ſkins of this kind of Foxes are but of ſmall value.

Fox, Antarctic. This ſpecies, which is a native of the Falkland Iſles, near the extremity of South America, has ſhort-pointed ears, and hazel-coloured irides. The head and body are of a cinereous brown hue, the hair being more woolly than that of the common Fox; the legs are daſhed with ruſt-colour; and the tail is duſky tipped with white. This animal, which is about one-third larger than the common Fox, has much the appearance of the wolf in it's ears, tail, and the ſtrength of it's limbs; for which reaſons the French call it loup renard, or the wolf Fox.

The Antarctic Fox is the only land animal of theſe remote iſles. It lives in the vicinity of the ſea-ſhores; kennels like the common Fox; and forms regular paths from one bay to another, probably for the convenience of ſurprizing water-fowl, on which it ſubſiſts. It becomes very meagre at certain ſeaſons for want of prey, is very tame, emits a moſt fœtid ſmell, and barks like the dog.

Fox, Grey. The noſe of this creature is ſharp; the ears are long, ſharp, and upright; the legs are long; and the whole body is of a grey colour, except a little redneſs about the ears. This ſpecies, which inhabits Carolina and the warmer North American climates, differs from the arctic Fox in ſhape, and in the nature of it's habitation. It agrees with the common Fox in the firſt; but varies from it in the laſt, never burrowing, but living in hollow trees. The ſportſman receives no diverſion from the chace of this animal; for it ſpeedily takes to it's retreat, whence it is impoſſible to diſlodge it. Unlike the ſpecies in general, it has no ſtrong fœtid ſmell. It is eaſily domeſticated when caught young; and it's ſkin, when in proper ſeaſon, is very convenient for the manufacture of muffs.

Fox, Silvery. This ſpecies, which reſembles the common Fox in ſhape, abounds in the woody eminences of Louiſiana, where there is abundance of game, with which it ſupplies all it's wants. It is a very beautiful creature; the ſhort hairs covering it's body are of a deep brown colour; and over them ſpring long ſilvery hairs, which give it a very elegant appearance.

Fox, Barbary. This animal, the Chacal of Buffon, has a long ſlender noſe, ſharp upright ears, and a long buſhy tail. It is about the ſize of the common Fox; but it's limbs are ſhorter, and it's noſe is more ſlender. The body is of a pale brown colour; the ſpace above and below the eyes is black; from behind each ear proceeds a black line, which ſoon dividing into two, extend to the lower part of the neck; and the tail is ſurrounded with three broad rings.

Fox, Macassar. This creature receives it's name from the iſland where it is principally found. The tail is exceedingly long and buſhy; the ears are ſhort; the feet are flat, and furniſhed with long claws not much unlike thoſe of the bear or monkey; and the whole body is of a cinereous colour.

Fox, Sea. A large fiſh, diſtinguiſhed in the Artedian ſyſtem by the name of the ſqualus with a tail longer than the body. Many authors affirm that it has the rank ſmell of the Fox, and that it's fleſh is extremely ill-taſted: but, on a ſtrict inveſtigation of the ſubject, this does does not appear to be founded in truth; for it's ſmell differs very little from that of other fiſhes; and it's fleſh is far from being diſagreeable. Hence it will appear, that theſe unfavourable qualities have been attributed to it in order to ſtrengthen it's reſemblance to the Fox; a name which only the length of it's tail ſeems to render applicable; and even though the tail is very long for a fiſh of this kind, it can ſcarcely be ſaid to reſemble that of the Fox.

This fiſh is about nine feet long, and ſometimes thirteen or fourteen; and it's breadth, where largeſt, is about fourteen inches. The tail is nearly as long as the whole body beſides, and is bent downwards in the ſhape of a ſcythe. Near the origin of the tail, there is a ſingle fin below; and the ſpine being extremely flexible in this part, the tail is by this means eaſily elevated or depreſſed. On the back there are two eminences, a large one near the middle, and a ſmaller near the tail. There are three fins on each ſide; the pair next the head are large, and reſemble the wings of a bird; but the others are ſmaller. The ſkin is ſmooth, and without ſcales; and the fins and eminences on the back are compoſed of a ſort of ribs, united by a ſtrong, tough membrane. The tongue, which is inſeparably annexed to the lower jaw, is compoſed of a great number of bones articulated together by a fleſhy ſubſtance of a fibrous texture; and covered with a membrane, in which are ſeveral prominences that appear as pellucid as the fineſt cryſtal when viewed by the help of a microſcope. The throat and ſtomach are remarkably large; and ſome authors inform us, that the creature, when affrighted, will ſwallow it's young ones, and afterwards vomit them up again when the danger is paſt: others, who expatiate on it's cunning, tell us, that when it has ſwallowed a bait affixed to a hook, it will take in the whole line, till it comes to a weak place, where it can bite it aſunder. But theſe tales ſeem only calculated to keep up the reſemblance between it and the Fox with reſpect to craftineſs; for they but ill apply to this fiſh, which has no teeth that can aſſiſt it in biting with effect, though it has three rows of them. The head ſeems a mere lump of fleſh, being covered with muſcles, of which ſome are four inches thick; the ſkull, which is no bigger than a man's fiſt, is very thick, and divided into three cavities, each of which contains a ſmall quantity of mucous matter mixed with blood; ſo that the fiſh ſeems to be almoſt deſtitute of brains. The eyes are as large as thoſe of the ox, and of an hemiſpheric figure, being flat before, which gives them a very ſingular appearance; the back is of an aſh-colour; and the belly is white.

The Sea Fox is commonly caught in the Mediterranean, where it feeds on other fiſhes and marine plants. It has alſo been ſometimes taken in the Britiſh ſeas; and is ſuppoſed to be the fiſh called the fluſher, from it's attacking and beating the grampus with it's long tail when it riſes to the ſurface of the water for the benefit of the air.

Fox, Tailed Monkey. Another appellation for the ſaki, or cagui; ſo called from the remarkable length and hairineſs of it's tail.

Francolin. A delicious bird of the partridge

tridge genus, to which ſome authors have given the name of attagen, though they ſeem to conſtitute two diſtinct ſpecies. The Francolin, properly ſo called, is a native of the Eaſt Indies, and ſome iſlands of the Archipelago. It is ſomewhat larger than the common partridge; and each of the wings, when cloſed, is ſix inches long. The bill, which is about an inch long, is black, and ſhaped much like that of the common hen; and the tongue and inſide of the mouth are of an hazel colour. The irides are alſo hazel-coloured; and the head is covered with black feathers, except that there is a white ſpot under each eye, and a ſmall admixture of red on the crown, with a few ſmall ſpots of white which proceed from the part above the eyes, and join on the hinder part of the head. The feathers, all round the neck, are of a reddiſh orange-colour ſpeckled with ſmall round ſpots behind between the neck and back; the belly and breaſt are black; but there are regular round white ſpots on the ſides: there are alſo white ſpots on the belly and thighs, but theſe are more broken, and mixed with a little reddiſh colour. The covert-feathers under the tail are entirely a reddiſh orange; the plumage of the back is black and browniſh; and the feathers on the ſides of the back, which fall partly over the wings, have the black and brown indented into each other. The wings are duſky, and regularly marked with round, light browniſh ſpots; and the inſides of the wings are of the ſame colour, except that the ſpots are more broken, and run in tranſverſe lines. The lower part of the back and the rump are covered with variegated plumage, black and white in narrow tranſverſe lines; the tail-feathers are marked in the ſame manner, except the tips, which, for an inch in breadth, are wholly black; the legs and feet are overſpread with red ſcales; and three of the four toes are connected near their bottoms by membranes. The claws are of a horn colour; and the legs of the male are furniſhed with ſpurs.

FREGAROLA. A name given by ſome writers to the ſmall river-fiſh well known in England by that of the minnow.

FREGGIA. A long anguilliform fiſh of the tænia kind, more commonly called cavarigo.

FRINGILLA. The name of a large genus of birds of the general order of paſſeres, in the Linnæan ſyſtem of zoology. The diſtinguiſhing characters of this genus are, that the tongue is whole and even; the beak is of a conic, ſtraight, ſharp-pointed figure; and one mandible receives the other into the ſinus of it's baſis. Of this genus are the chaffinch, goldfinch, linnet, ſparrow, &c.

FRINGILLAGO. An appellation given by ſome naturaliſts to the whole genus of the titmouſe; while others have reſtrained it to that particular ſpecies commonly known in England by the name of the ox-eye. This bird is conſiderably larger than any of the genus, weighing nearly an ounce; whereas the others ſeldom exceed three drams. The head and throat are black; the cheeks are white; the back is green; the belly is of a yelloviſh green hue, divided in the middle by a bed of black which extends to the vent; and the rump is of a blueiſh grey colour. The quill-feathers are duſky, edged with blue and white; the coverts are blue, the greater being tipped with white; the exterior ſides of the outmoſt feathers of the tail are white, but the reſt are blueiſh, and their interior ſides are duſky. The legs are of a leaden colour; the toes are divided to the origin; and the back toe, as is common to the whole genus, is large and ſtrong. This bird, which builds it's neſt in hollow trees, and lays ten eggs, ſometimes viſits gardens, and is extremely injurious to the fruit-trees.

FRINGILLAGO AMERICANA CŒRULEA. The American titmouſe; otherwiſe known by it's Brazilian name, guiracenoia.

FRINGILLARIUS ACCIPITER. A ſpecies of hawk, called by ſome authors niſus; and, in England, the ſparrow-hawk.

FRIZONE. An appellation ſometimes given to the caucothraſtes, or groſsbeak; called alſo the haw-finch.

FROG. This animal is too well known to require a minute deſcription; but ſome of it's habits and properties are too ſingular and intereſting to remain unnoticed. Compared to the bulk of it's body, it's leap, or ſpring, is remarkably great; and it is the moſt expert ſwimmer of all four-footed animals. For theſe purpoſes nature has excellently adapted the parts of this creature; the arms being light and active; and the legs and thighs long, and furniſhed with very ſtrong muſcles.

To deſcribe the form of animals well known, would be ſuperfluous; but, to mark thoſe differences which diſtinguiſh one from another, is by no means unneceſſary. The Frog and the toad have a general ſimilitude, and yet the lines which divide them are unbroken and entire. The Frog moves by leaping; the toad crawls along the ground. The Frog is in general ſmaller than the toad, is of a brighter colour, and has a more poliſhed ſurface; the toad is brown, rough, and duſky. The Frog is light and nimble, and it's belly is ſmall in proportion to it's ſize; but the toad is ſlow, corpulent, and heavy. The Frog, when caught, raiſes up it's back into a kind of hump; whereas that of the toad is ſtraight and even. The internal conformation of theſe two animals is nearly the ſame, except that the lungs of the toad are more compact than thoſe of the Frog; and that the former has fewer air-bladders than the latter, which renders it leſs adapted for an aquatic life.

The brain of the Frog is but ſmall in proportion to it's ſize; it has a very wide ſwallow; and a ſtomach apparently ſmall, but capable of great diſtenſion. The heart, like that of all other animals truly amphibious, has but one ventricle; the blood, therefore, can circulate, while the creature remains under water, without the aſſiſtance of the lungs, which reſemble a number of ſmall bladders joined together like the cells of a honey-comb; they are connected to the back by muſcles; and the animal can diſtend or exhauſt them at pleaſure. The male has two teſticuli lying near the kidneys; and the female has two ovaries, near the ſame part; but neither male nor female have any evident external inſtruments of generation, the anus ſerving for that purpoſe in both.

Theſe are the moſt ſtriking peculiarities in the anatomy of the Frog; and in theſe it agrees with the toad, the lizard, and the ſerpent. The internal conformation of all theſe tribes are nearly the ſame; they are furniſhed with ſpongy lungs, a ſimple heart, and appear deſtitute of the external members which ſerve to continue the kind.

The common Frog begins to couple early in the ſeaſon; namely, as ſoon as the ice is thawed from the ſtagnant waters. In ſome places, this genial appetite is protracted by the cold till the

month of April; but it generally begins to operate about the middle of March. The male is uſually of a greyiſh brown colour; but the female is more inclining to a yellowiſh hue, and ſpotted with brown. When they copulate, the colours of both are nearly alike on the back; but, as they change their ſkins almoſt every eight days, the old ones falling off in the form of a mucus, the male becomes more yellow, and the female more brown. The arms and legs of the males are much ſtronger than thoſe of the females; and, at the time of impregnation, they have a kind of fleſhy excreſcence on their thumbs, which they firmly fix to the breaſts of the females. This Linnæus ſuppoſed to be the male inſtrument of generation; but, on a minute inſpection, it is found only conducive to keep the female in a more ſtrict embrace: it may be amputated, and the impregnation continue unimpaired; and it is even ſometimes found in the females, while ſome of the other ſex are entirely deſtitute of it.

The ſexes couple only once a year, and then they continue united ſometimes for four days ſucceſſively. At this time their bellies are greatly inflated; that of the female is filled with eggs; and the ſkin of the male is diſtended with a kind of limpid water, which is ejected in impregnation. As ſoon as the male has leaped on the female, he throws his fore-legs round her breaſt, and cloſes them ſo firmly, that they are with no ſmall difficulty diſengaged. This graſp appears to be involuntary and convulſive; the animals cannot be torn aſunder without a laceration of the parts; they ſwim, creep, and leap, thus united, till the female has ſhed her ſpawn, which at length ſhe performs almoſt in an inſtantaneous manner. How the impregnation is performed without any apparent inſtruments of generation, has long been an object of enquiry, and ſtill continues undetermined. In order to ſolve this difficulty, Ræſel, of Nuremberg, perſevered in an examination of their mutual congreſs for three years ſucceſſively; and availed himſelf of all the lights which diſſection, or the analogy of formation, could furniſh him. Having choſen twelve couple of Frogs thus united to each other, and placed each couple in a glaſs veſſel filled with water, he kept them in his view almoſt day and night, and even ſat up two nights together for the purpoſe of examining their operations. The firſt day, he obſerved nothing that deſerved remark; the ſecond, they began to be more agitated, the males making a noiſe ſomewhat reſembling the grunting of hogs; while the females only continued to ſink and riſe alternately in the water. The male of the firſt couple ejected the humidity with which his body was ſwollen, and ſoon after quitted the female. Our philoſopher continued for twelve hours to obſerve whether the female would emit her ſpawn; but finding that ſhe was tardy, he diſſected both her and the male. In the latter, the ſpermacetic veſſels were entirely empty, as might have naturally been ſuppoſed; but the ſpawn of the female ſtill continued in her body: on it's being extracted and put into water, it periſhed without producing any animal whatever; hence he rationally concluded it requiſite that the eggs ſhould be ejected from the body of the female before they could be prolific. In another pair, the male quitted the female, which did not eject her ſpawn till ſixteen days after; and theſe, like the former, came to nothing. But, with reſpect to ſome of the reſt, the caſe was very different: the females ejected their ſpawn; while the males remained in their ſtations, and impregnated the maſſes, at different intervals, as they fell from the females; and theſe all produced animals in the uſual courſe of generation. From theſe obſervations, it is eaſy to infer, that the female was neither impregnated by the mouth, as ſome philoſophers have imagined, nor by the excreſcences at the thumbs, as was the opinion of Linnæus; but by the inſperſion of the male ſeminal fluid on the eggs of the female, as they proceeded from her body.

A recent publication, by that very penetrating naturaliſt the Abbe Spallanzani, ſeems, indeed, to throw all the light on this ſubject which can ever be expected. This gentleman made the ſame experiments as Ræſel, and found the ſame effects: of one hundred and fifty-ſix females which he opened, after they had been ſome time in the embraces of the males, but before they had made any voluntary emiſſions, he did not find one egg which was prolific; whereas thoſe excluded ſpontaneouſly by the females were all endowed with the vital principle. He, however, farther obſerved, that as ſoon as the eggs began to be diſcharged, the agitations of both the male and the female were extreme; and that an obtuſe point, which he ſuſpected to be the penis, was elongated, and occaſionally brought towards the eggs neareſt the vent; but he was unable to perceive any emiſſion. In order to clear up this point, he placed ſome couples, of which the females were beginning to diſcharge their eggs, in empty veſſels. He ſucceeded in this experiment beyond expectation; for ſuch was the attachment of the males, that they perſiſted in the performance of their office, though taken out of their natural element. The Abbe now clearly perceived a ſmall jet of limpid liquor falling from the tumid point in the vicinity of the anus upon the eggs extruded from the body of the female. The eggs being afterwards put into water, and bringing forth young, he concluded, without heſitation, that the liquor was real ſemen; and was afterwards juſtified in this opinion, by diſcovering it in the veſiculæ ſeminales, as well as by a whimſical and ſeemingly ludicrous experiment of putting breeches of waxed taffety on the male; when, notwithſtanding this incumbrance, he fought the female with equal ardour: but the event was ſuch as he might naturally have expected; the eggs were never prolific, and the ſemen appeared in the breeches in the ſhape of drops; and that theſe drops were real ſemen, was aſcertained beyond all diſpute, by an artificial fecundation which the Abbe obtained by their means.

A ſingle female Frog produces from ſix to eleven hundred eggs at a time; and, in general, ſhe throws them all out together by one effort; though in this operation ſhe is ſometimes occupied for the ſpace of a whole hour. While thus employed, the male may be obſerved performing the part of a midwife in promoting the expulſion of the eggs, by working with his thumbs, and compreſſing the body of the female. The eggs being emitted, expand themſelves into a round form, and drop to the bottom of the water; while the male ſwims off, and ſtrikes his arms with his uſual freedom and agility. The egg, or little black globe, which produces the tadpole, is encompaſſed with two different kinds of fluid: that which immediately ſurrounds the globe is clear and tranſparent, and incloſed in it's proper membrane; while that which ſurrounds the whole is muddy and mucous.

The

The tranſparent liquor nouriſhes the tadpole, and anſwers the ſame purpoſes that the whites of eggs do to birds.

During the four firſt hours after the eggs are emitted, no perceptible change takes place; but after that ſpace they begin to grow larger, to aſſume a lighter colour, and ſoon after to re-aſcend to the ſurface of the water. At the expiration of eight hours, the white fluid in which the eggs ſwim grows more thick; they loſe their blackneſs; and, as they increaſe in ſize, ſomewhat of their ſpherical figure. The twenty-firſt day, the egg begins to open a little on one ſide, and the rudiments of a tail to appear, which gradually becomes more and more diſtinct. On the thirty-ninth day, the little animal acquires motion; it's tail is brandiſhed at intervals; and it then becomes evident that the circumfuſed liquor nouriſhes it. In two days more, ſome of theſe animalcules fall to the bottom; while others continue ſwimming in the ſurrounding fluid with increaſed vivacity and motion. Thoſe which fall to the bottom remain in that ſituation the whole day; but, after having expanded themſelves a little, (being hitherto folded up) they mount at intervals to the mucus they had before quitted, on which they are obſerved to feed with great alacrity. The next day, they aſſume their tadpole form; and, in three days more, they are perceived to have two little fringes beneath the head, which ſupply the place of fins; and theſe, in four days after, acquire a more perfect form. At this period they begin to feed greedily on ſuch weeds as their ſituation affords; and, quitting their former food, they derive their ſubſiſtence wholly from them till they arrive at maturity. When ninety-two days have elapſed, two ſmall feet begin to be protruded near each of their tails; and, four days after, they refuſe all vegetable food, their mouths appear furniſhed with teeth, and their hinder legs are compleatly formed. In a day or two more, their arms are compleatly produced; and each of the animals appears wholly perfect, except that it ſtill continues to carry a tail. In this ſingular ſituation, the creature reſembles at once a Frog and a lizard; which figure it retains for about ſix or eight hours; and then the tail dropping off by degrees, the animal appears in it's laſt and moſt perfect form.

The Frogs having thus changed their figure in leſs than a day, are obſerved to change their appetites likewiſe; and ſo extraordinary is this tranſformation, that their former food is abſolutely rejected; and they immediately become carnivorous, and prey on worms and inſects; but as the water does not ſupply theſe in ſufficient abundance, they are compelled to quit their native element, and to ſeek their food on land. At firſt, indeed, their imbecillity obliges them to ſkulk among buſhes, and under ſtones; but, when a ſhower has once fallen and refreſhed the earth, the young animals are ſeen to quit their retreats, in order to enjoy the grateful humidity. On many occaſions the ground is perfectly obſcured by their numbers; ſome hunting for their prey, and others ſearching for ſafe retreats. From the myriads that thus preſent themſelves, ſome credulous perſons have conjectured that theſe animals were generated in the clouds, and ſhowered down on the earth; but, had ſuch been at the trouble of tracing them to the neareſt pool, they would no doubt have reaſoned in a very different manner.

As the Frog derives the greateſt part of it's ſubſiſtence from the land, ſo it lives principally on it: however, when the cold nights commence, it returns to it's native element, always making choice of ſtagnant waters, where it can lie concealed at the bottom; and there it continues torpid, or at leaſt poſſeſſed of very little motion, during the winter; like the reſt of the dormant race, neither requiring food, nor needing any aſſiſtance from the air.

The difference of ſex in theſe animals is not perceptible till they have arrived at their fourth year; nor do they begin to propagate till they have reached that period. Hence, on comparing their ſlow growth with their other habitudes, it would ſeem that they live about twelve years; but ſo numerous are their enemies both at ſea and land, that it is probable very few of them reach that period which would naturally terminate their lives.

Frogs, as already obſerved, live on inſects, but they never devour any not endowed with motion. They continue fixed and immoveable till their prey appears; and, when they think it ſufficiently near, they ſpring forward with great agility, dart forth their tongues, and ſeize it with unerring aim. The tongue of the Frog, as in the toad, the lizard, and the ſerpent kinds, is extremely long, and formed in ſuch a manner, that it's point is reverted down the throat: this offenſive weapon is likewiſe covered with a glutinous ſubſtance, by means of which every animal which it touches adheres to it, and is thus held faſt till it can be drawn into the mouth of the Frog.

But though Frogs are ſufficiently predaceous, they are nevertheleſs capable of continuing a long time without food. A German phyſician kept one of them for eight years in a glaſs veſſel covered with a net; during which long period, it's food was at all times very ſparing: in ſummer it was fed with graſs; and in winter, with hay a little moiſtened. Flies were alſo occaſionally put into the glaſs, which it generally followed with open mouth, and caught very expertly. In winter, when flies were with difficulty procured, the animal generally became lean; but, in ſummer, it recovered it's fleſh again. It was kept in a warm room, and ſeemed always lively, and ready for it's prey: however, on the commencement of the eighth winter, when no flies could be found, it languiſhed, and died. It is not, indeed, certain how long this animal might have lived, had it been furniſhed with proper nouriſhment; but of this we are aware, that a very ſmall quantity of food will ſupply the neceſſities of theſe creatures.

The Frog is ſo extremely tenacious of life, that it will jump about ſeveral hours after it's head has been amputated; and continue in motion even after it has been embowelled. When ſtripped of it's ſkin, either by cruel children, or experimental naturaliſts, it appears for ſeveral hours to feel no abatement of it's natural vigour; and we are credibly informed, that many of theſe animals, after having undergone this terrible operation, have acquired new ſkins.

The croaking of Frogs is ſo well known, that from this circumſtance, in ſome countries, they are diſtinguiſhed by the ludicrous appellation of Dutch nightingales: indeed, the noiſe of the aquatic Frogs of Holland is loud beyond conception; and it will hardly be credited, that animals of ſuch a diminutive ſize ſhould be able to ſend forth notes which can be heard at the diſtance of three miles; yet this is actually the caſe. According to the ingenious

ingenious Ræſel, the large Water-Frogs have voices as loud as the bellowing of bulls; to effect which, they puff up their cheeks to a ſurprizing magnitude. However, the males only croak, the females remaining ſilent; and the voice of the former ſeems only the call of courtſhip. It is certain that, during the ſeaſon of copulation, the loudneſs of their croaking is in ſome places very troubleſome; for then whole lakes ſeem to be vocal, and their various diſſonant notes almoſt ſtun the neighbourhood. Before rainy weather, they alſo exert their voices to the utmoſt; they are then heard to pour forth their tones with unceaſing aſſiduity, and to welcome the approach of their favourite moiſture. No barometer more certainly prognoſticates an approaching change of weather; and this may probably ſerve to explain an opinion which ſome people entertain, that there is a certain month in the year, called paddock-month, in which Frogs never croak: while the fact is, that, in the hot ſeaſon, when the moiſture is dried up, they neither enjoy health nor food in the ſame proportion as during rain; and this renders them mute and inactive.

As Frogs cloſely adhere to the backs of their own ſpecies, ſo it has been proved, by repeated experiments, that they alſo adhere to thoſe of fiſhes. They will at times ſtick to the backs of carp in ponds; and, fixing their fingers in the corner of each eye, in this manner they are often caught together, the carp being blinded, and very much emaciated. Whether this act proceeds from the deſires of the Frog when diſappointed of it's proper mate, or whether it be the effect of a natural enmity ſubſiſting between Frogs and fiſhes, is not eaſily determined. However, the following ſtory, as related by Walton, might incline us to adopt the latter opinion. 'As Dubravius, a biſhop of Bohemia, was walking with a friend, by a large pond in that country, they ſaw a Frog leap on the head of a pike, which lay very quietly by the ſhore-ſide; when the Frog having expreſſed malice or anger by his ſwollen cheeks and ſtaring eyes, did ſtretch out his legs, and embrace the pike's head, and preſently reached them to his eyes, tearing with them and his teeth thoſe tender parts: the pike, irritated with anguiſh, moved up and down the water, rubbing himſelf againſt weeds, and whatever he thought might rid him of his enemy; but all in vain, for the Frog did continue to ride triumphantly, and to bite and torment the pike till his ſtrength failed; and then the Frog ſunk with him to the bottom of the water. Preſently the Frog appeared again at the top, and croaking, ſeemed to rejoice like a conqueror; after which, he immediately retired to his ſecret hole. The biſhop, who had beheld the battle, called his fiſherman to fetch his nets; and by all means to get the pike, that they might declare what had happened. The pike was drawn forth, having both his eyes eaten out; at which, when they began to wonder, the fiſherman aſſured them he was certain that pikes were often ſo ſerved.'

The Frog affords the curious in microſcopical obſervations a very beautiful view of the circulation of the blood; but the method of examining it to advantage was firſt diſcovered by the ingenious Dr. Stuart. This gentleman made uſe of the ſolar microſcope in a particular manner adapted to that purpoſe. He opened the ſkin of the belly from near the anus to the throat; and then giving it a little ſnip ſide-ways, both at top and bottom, and ſticking a fiſh-hook into each corner of the ſkin, it was eaſily extended before the microſcope; and exhibited on the ſcreen the moſt beautiful view imaginable of the veins and arteries of the ſkin, with the blood circulating through them. In the arteries, thus viewed, the blood is ſeen to ſtop, and recede a little at every pulſation by the dilatation, and ruſh forcibly on again by the contraction of the heart; while in the veins it ever keeps the ſame equable and uniform current, with a ſurprizing rapidity; and, when the ſcreen is removed farther back, and the object by that means more enlarged, the alternate expanſion and contraction of the ſides of the arteries are very viſible. After this, the abdomen of the Frog being opened, and it's muſcles extended before the microſcope in the ſame manner with the ſkin, their ſtructure is beautifully diſplayed, being all compoſed of bundles of tranſparent ſtrings of fibres, lying parallel to each other, and joined by a common membrane. When this has been ſufficiently examined, a part of the entrails being pulled out and extended with the meſentery, one of the fineſt views of the circulation of the blood is exhibited: that fluid is ſeen paſſing through numberleſs veſſels at one and the ſame inſtant, in ſome one way, and in others directly contrary. Several of the veſſels are thus magnified to more than an inch in diameter, and the globules of blood running through them appear nearly as large as peppercorns; while, in many of the minuteſt veſſels, only ſingle globules are able to find a paſſage, and that too by changing their ſhape into an oblong ſpheroid. The pulſation and acceleration of the blood in the arteries are alſo very agreeably ſhewn by this means. As the animal, under examination, becomes languid and near expiring, the blood in the arteries will often ſtop on a ſudden, and ſeem as if it were coagulating, and then run back for ſome time; after which it will again recover it's natural courſe with a great deal of rapidity. A due conſideration of the foregoing particulars may poſſibly account for the intermiſſions, ſtarts, and irregularities, perceived in the pulſes of perſons at the point of death.

Frog, Edible. This animal differs from the common Frog in having a high protuberance on the middle of the back, which forms a very ſharp angle. It's colours alſo are more vivid, and it's marks more diſtinct, being a pale or yelloviſh green, impreſſed with rows of black ſpots from the head to the rump. Both this and the common Frog are eaten in ſome countries. 'In the markets at Paris,' ſays Pennant, 'we have ſeen whole hampers full, which the venders were preparing for the table, by ſkinning and cutting off the foreparts, the loins and legs only being kept.'

Frog, Green, or Small Tree-Frog. This ſpecies is diſtinguiſhed from the other kinds by their colour, the minuteneſs of their ſize, and by their ſitting on the leaves of trees. In Germany and Switzerland they are frequently ſeen on trees and ſhrubs in the evening; and, from their note, they might be miſtaken for birds rather than Frogs. They ſeem to be the cicadæ of Virgil.

Frog of Martinico. This animal, which is the moſt beautiful of the genus, is of a grey colour with yellow and black ſpots or ſtripes; and lives ſolely in the woods, where it makes a noiſe in the night-time ſomewhat ſimilar to the barking of a dog.

Theſe Frogs are above a foot in length, without

out including their thighs, which are large and fleſhy. The French ſpeak highly of the whiteneſs, tenderneſs, and delicacy of their fleſh; and, in dreſſing them, they waſte only their heads. They fricaſee them like chickens, and boaſt that ſtrangers really take them for ſuch: and the negroes hunt them in the night-time with lighted ſugar-canes that have paſſed through the mill.

Some naturaliſts obſerve, that theſe Frogs bring forth in hollow trees; and that they firſt emit a quantity of white froth, about the breadth of a man's hand, on which they lay ſix, eight, or a dozen eggs, more or leſs, of the ſize of coriander ſeeds, and of an orange colour. It is uncertain whether they ſit on them or not; however, it is well known that the females never quit the place where they lay their eggs till they are hatched.

FROG, CAROLINA. In this country there are ſeveral ſpecies of Frogs; but the moſt ſingular is the Bull-Frog, ſo called from the exact reſemblance which it's croaking bears to the voice of that animal. Theſe Frogs are very large; and, according to ſome authors, afford as much fleſh as a full-grown pullet. Cateſby ſays, that they are of a brown colour, having a great number of dark ſpots mixed with a greeniſh red. The eyes are brown; the irides are yellow; and under the eyes there are two round ears, covered with a thin membrane.

FROG, AMERICAN, OF SEBA. This ſpecies has an air-bladder on each ſide of the lower jaw, which in hot weather is replete with that element. It is of a bright reddiſh colour with deep red ſpots; and it's claws are large, and ſhaped like the leaves of ſcurvy-graſs. This Frog begins to croak with uncommon ardour about ſun-ſet.

FROG, BRAZILIAN. The head of this creature, which is large, reſembles that of the toad; and the body is of a reddiſh aſh-colour interſperſed with red warts.

FROG, SEA, AMERICAN. This ſpecies is of a prodigious ſize; the feet, if we may credit Seba, being a quarter of a yard in length. The whole body, except the head, is an aſh-coloured brown, marked with great and ſmall warty ſpots of a faint greyiſh colour below, and of a yellowiſh aſh-colour on the apex. The back, and the ſpace between the ſhoulders, riſe into a prominence, and ſeem to be divided from the other parts by whitiſh lines. On the fore-feet there is a kind of armour, of a bright aſh-colour ſpeckled with black; the head is barred with ſmall reddiſh ſtreaks; the eyes are large and ſparkling; the ears are round and ſhort; the tongue is large, it's fore-part adhering to the lower jaw; the fore-feet have each four toes, compoſed of four joints; and the toes on the hinder feet are large, and armed with claws connected by a thin membrane.

FROG-FISH. An appellation given to the rana piſcatrix, or lophius; called in England the ſea-devil and the angler.

FROG-FISH OF SURINAM. This ſingular animal is produced by the transformation of a Frog into a Fiſh. The Frog, in it's firſt ſtate, is ſpotted with brown, yellow, and green, which colours are paler on the belly; the hinder feet are webbed like thoſe of the gooſe; but the fore-legs are deſtitute of webs. The firſt metamorphoſis this creature undergoes, is the protruſion of a tail; after which it gradually acquires the ſhape of a Fiſh, the two fore-feet decreaſing and waſting by degrees, and then the hinder legs, till at length the Frog is transformed into a perfect Fiſh. The Indians and Europeans of Surinam call theſe Fiſhes jackies: they are cartilaginous, of a ſubſtance like that of the muſtela, and eſteemed very delicate food; and a bone or cartilage runs down the back, from which ſpread ſmall bones all over the body. Theſe Fiſhes are firſt of a darkiſh colour, and afterwards grey; they are adorned with beautiful ſcales; and the body of each is divided into two equal parts.

FROTH WORM, OR CUCKOW-SPIT. An appellation given to a white froth or ſpume, very common, during the ſpring and ſummer ſeaſons, on the leaves and ſtalks of various plants. Though all writers on vegetables have perhaps noticed this froth, few of them, till very lately, have underſtood it's origin. Many imagined it to be an exhalation from the earth; ſome eſteemed it the ſaliva of the cuckow; and others, the extravaſated juices of the plants, or a kind of hardened dew. But all theſe opinions are equally erroneous: the froth in queſtion undoubtedly proceeds from a ſmall incloſed inſect, with an oblong, obtuſe body, a large head, and ſmall eyes. This animal emits the ſpume from the anus, and other parts of it's body; and, after undergoing ſeveral changes in this ſituation, it burſts into a winged ſtate, and flies abroad in queſt of it's mate. It has four wings, the two external ones being of a duſky brown colour marked with two white ſpots.

FRUGIVOROUS. An epithet uſed by naturaliſts to expreſs ſuch animals as ſubſiſt principally on fruits.

FRUIT-FLIES. A name given to a ſpecies of ſmall black Flies found in vaſt numbers among fruit-trees in the ſpring ſeaſon. Lewenhoeck, who preſerved ſome of theſe inſects for his microſcopical obſervations, obſerved that they did not live longer than a day or two; but that the females, during this period, laid a great number of longiſh eggs. Thoſe gardeners who ſuppoſe that theſe Flies wound the leaves of trees, labour under a miſtake: it is true, indeed, that they feed on their juices, but they have no weapons with which they can extract them; they ſubſiſt on ſuch as are naturally extravaſated; and, when theſe are inſufficient, they haunt thoſe places to which pucerons reſort, and partake of the fruits of their labour.

FRUSO. An appellation given by ſome naturaliſts to the Coccothrauſtes Criſtata Indica, or Virginian nightingale.

FUCA. A fiſh nearly allied to the genus of blenni; the phycis of Ariſtotle and Ælian, and the tinca marina of Salvian and Rondoletius.

FULICA. The claſſical name for the Coot.

FULIGULA. A name given by Geſner to a ſpecies of duck common to ſeveral parts of the world.

FULLO. An appellation given by Gaza and others to the tench, or black cyprinus; called by the Greeks pſylon.

FULMAR. A ſpecies of procellaria, or petrel, that inhabits the iſle of St. Kilda, one of the Hebrides, where it appears in November, and continues the whole year, except during the months of September and October. It lays a large white egg, and hatches it's young about the middle of June.

This bird is extremely beneficial to the iſlanders; inaſmuch as it ſupplies them with oil for their lamps, down for their beds, a delicacy for their tables, a balſam for their wounds, and a medicine for their diſeaſes. It is alſo an infallible prognoſticator of the weather, particularly of the change of

wind: if it comes towards the land, no weſt wind is to be expected for ſome time; and the contrary when it returns, and keeps at ſea.

The Fulmar, like all the petrels, has a peculiar faculty of ſpouting from it's bill, to a conſiderable diſtance, a large quantity of pure oil; which it diſcharges, by way of defence, in the face of any perſon who attempts to ſeize it. In order to preſerve this oil, the natives always endeavour to catch this animal by ſurprize: but ſometimes it ſpurts this treaſure in their faces while they are engaged in the purſuit of other game; and it is ſaid, that to a certain gentleman this unexpected ſalute really proved fatal, by making him ſuddenly quit his hold. This oil, excluſive of domeſtic purpoſes, is ſaid to be very ſerviceable in rheumatic caſes.

The Fulmar is larger than the common gull; the bill is very ſtrong, yellow, and hooked at the extremity; the noſtrils are compoſed of two large tubes, lodged in one ſheath; the head, neck, belly, and tail, are white; the back and coverts of the wings are aſh-coloured; the quill-feathers are duſky; the legs are yellow; and, inſtead of a back toe, it has only a ſort of ſtraight ſpur.

The Fulmar feeds on the blubber or fat of whales, and other animals; which being ſoon convertible into oil, ſupplies it with the conſtant means of defence, as well as of proviſion for it's young, which it nouriſhes by injecting that fluid into their mouths. It is likewiſe ſaid to feed on ſorrel, which probably helps to qualify the unctuous diet on which it principally ſubſiſts.

Frederic Martens, who ſaw vaſt numbers of theſe birds at Spitzbergen, obſerves, that they are very bold, hovering round the whale-fiſhers in large flocks; and that when a whale is taken, in ſpite of all endeavours to the contrary, theſe creatures will perch on it, and pick out large lumps of fat, even while the animal is alive. Whales are alſo frequently diſcovered at ſea by the multitudes of Fulmars which hover over them; and, when a ſingle whale happens to be wounded, prodigious numbers of theſe birds purſue it's bloody track.

FUMER. An appellation ſometimes given to the pole-cat.

FUNDULUS. A name uſed by various authors to expreſs the cobitis, called in England the loach.

FUNDULUS is alſo applied by Schoneveldt, and ſome others, to ſignify the common gudgeon. The abſurdity and confuſion of giving two fiſhes the ſame name, which in fact is peculiarly appropriated to neither, are very evident in this, and numerous other inſtances which fall under a naturaliſt's notice: thus, even the word Gobio, the common appellation of the gudgeon, confounds that fiſh with another very different genus; and Artedi deſerves ſome commendation for clearing up this intricacy, by referring the gudgeon to the genus of cyprinus; giving it the ſpecific name of the five-inch ſpotted cyprinus, with the lower jaw ſhorter than the upper, and with two cirri or beards at the mouth.

FURO. An appellation given by ſome authors to the ferret, called alſo furunculus and ictis.

G.

GAD-FLY. A ſpecies of oeſtrus, having ſpotted wings, a yellow breaſt, a brown band, and a yellow abdomen terminating in a black point. This inſect is ſometimes called the Dun-Fly, Ox-Fly, and Breeze-Fly. Like the gnat, when examined by the microſcope, it appears to have a long proboſcis with a ſharp dart, and two darts ſheathed within it, which penetrate the ſkins of animals, and form a paſſage for their blood, on which the inſect feeds.

The eggs of the Gad-Fly are ſometimes depoſited on the ſkins of various quadrupeds, particularly thoſe of rein-deer, where they often occaſion incurable diſorders. In general, however, theſe eggs are laid in the water, each of which there produces a remarkable maggot, of a long flatted figure, and a brown colour, with a pencil of fine downy hairs at it's tail, which it ſpreads into a circular form on the ſurface of the water, whilſt it's head is plunged under it in ſearch of food. In the act of deſcending, theſe hairs being drawn together in an oval form, and made to incloſe a bubble of air, this aſſiſts the inſect in riſing again; and, ſhould this bubble happen to burſt, the creature ſqueezes another out of it's body, in order to ſupply it's place. The ſnout of this maggot has three diviſions, whence are darted three little pointed weapons reſembling the tongues of ſerpents.

GADUS. A genus of the malacopterygious or ſoft-finned fiſhes, in the Artedian ſyſtem; the characters of which are theſe: the branchioſtege membrane on each ſide contains ſeven bones of a ſomewhat cylindric ſhape; the back, in ſome ſpecies, has three fins, and in others only two; and the head is generally compreſſed, but in ſome it is depreſſed.

Artedi enumerates the following diſcriminations: thoſe which have three fins without any cirri, of which there are three ſpecies, the whiting, the cole-fiſh, and the whiting-pollack; thoſe which have three fins with cirri, to which belong the cod-fiſh, the haddock, the pouting, and the Corniſh poor; and thoſe which have two fins on the back, comprehending the hake, the ling, the eel-pout, and the bearded-gadus with a furrow at the firſt of the two back-fins, called in Cornwall the whiſtle-fiſh.

In the Linnæan ſyſtem, the Gadus is a genus of the jugulares. It's characteriſtics are theſe: it has a ſmooth head; ſeven ſlender branchioſtegeous rays; an oblong body with deciduous ſcales; the fins all covered with a common ſkin; and the ventral fins ſlender, and terminating in a point.

GADWAL,

GADWAL, or GRAY; the Anas Sterpera of Linnæus. See Duck, Gadwal.

GAGNOLA. The Spaniſh appellation for a ſpecies of the Acus, or Syngnathus, of Artedi. The particular ſpecies deſcribed under this name is called by that naturaliſt the hexagonal-bodied ſyngnathus with a pinnated tail. It ſeems to be the acus Ariſtotelis, or acus ſecunda; and is known in England by the ſeveral names of the needle-fiſh, the trumpet-fiſh, and the tobacco-fiſh.

GAIDEROPSARUS. A name given by ſome naturaliſts to a fiſh of the truttaceous kind caught in the Mediterranean, and more uſually called callarias.

GALADES. An epithet given by Rondoletius to a ſpecies of chama remarkable for it's milky whiteneſs, and derived from Galé, Milk. This ſpecies is extremely elegant.

GALBULA. A bird of the thruſh kind common in Italy and Germany. It is very remarkable for the elegant ſtructure and hanging poſition of it's neſt; and is thence called by ſome picus nidum ſuſpendens; and, by others, oriolus, chloreus, and icterus; being ſuppoſed to be the icterus, or jaundice-bird, of Pliny and the ancient naturaliſts.

This bird is ſomewhat larger than the common thruſh. The beak, which is about half an inch long, is red; the wing-feathers are black; but ſome are tipped and edged with white, and others are varied with yellow. The female is leſs beautiful than the male, her colours being more duſky. The Galbula is a bird of paſſage, feeds on inſects, and is eſteemed a great delicacy.

GALEA. A genus of echinodermata, or ſea hedge-hog, ſhaped like a large elevated helmet, compoſed of ſeveral tranſverſely joined plates or aſſulæ, and covered with very ſmall and rough tubercles, which appear like ſmall granulæ. When found foſſile, this genus is called the helmet-ſtone; and is marked with ten rows of double lines, either crenated or punctuated, running from the top to the baſe.

Three ſpecies of this genus have been deſcribed by naturaliſts; one with a ſcutated head having an oblong pentagonal plate like a ſhield on it's ſummit; a ſecond with a naked head, and deſtitute of a ſcutum; and a third having the teniæ laurated.

GALEA PISCIS. An appellation given by Geſner and others to the fiſh more generally called muſtela alia; and, by Artedi, made a ſpecies of the blenni with four bifid beards under the throat.

Galea Venetorum is alſo ſometimes uſed to ſignify the common muſtela.

GALEETO. A fiſh of the genus of blenni in the Artedian ſyſtem, diſtinguiſhed by the name of the blennus with the upper jaw longer than the under, and the top of the head accuminated. Rondoletius calls it the alauda non criſtata; and, in England, it is known by the name of the mulgranoc, and bullcard. It's colour is greeniſh, without any variegation in ſome; but, in others, a number of faint blue tranſverſe lines are diſpoſed on the back, the ſides, and the fins; the intermediate ſpaces between theſe lines being of a reddiſh brown hue on the back. It is a very vivacious animal; and, like the eel, lives many hours after being taken out of it's native element. It is caught among rocks and ſtones about the ſhores of the Mediterranean, and alſo on ſome parts of the Britiſh coaſts.

GALEUS CANIS; the Squalus Galeus of Linnæus. See Canis Galeus.

GALEUS LÆVIS; the Squalus Muſtelus of Linnæus. The ſmooth hound-fiſh, ſo called in order to diſtinguiſh it from the Galeus ſpinax, which is furniſhed with ſpines on it's back. The back and ſides of the ſmooth hound-fiſh are aſh-coloured; the belly is white; the body is long and round; the end of the noſe is obtuſe, and projects conſiderably beyond the mouth and eyes; and the tail is bifid. It has two dorſal fins, and two pair of ventral fins; and the aſperities of the jaws ſupply the place of teeth.

GALEUS RHODIUS. A name given by Athenæus, and ſome others of the ancients, to a very large and delicate fiſh, which Schoneveldt conjectures to be the ſturgeon; and, in confirmation of this opinion, adduces ſeveral powerful arguments.

GALEUS ACANTHIAS, or SQUALUS SPINAX. A fiſh of the ſhark kind, called in England the picked dog-fiſh, and the hound-fiſh. The body is long, round, and deſtitute of ſcales, but covered with a ſkin ſo extremely rough, that ſeveral artiſts uſe it in poliſhing their works. The back is of a browniſh aſh-colour; the belly is white, and ſomewhat ſmoother than the reſt of the body; the noſe is long, and rounded at the extremity; the pupil of the eye is black, of an elliptic figure, and placed tranſverſely; and the mouth, which is ſituated near the middle of the ſnout, has two rows of minute teeth. This fiſh is common in the Mediterranean and Engliſh ſeas.

GALEUS STELLATUS, the Starred Hound-fiſh. A ſpecies of dog-fiſh remarkably variegated with white ſpots ſhaped liked ſtars.

GALEXIA. An appellation given by Galen, and ſome of the more ancient writers, to the common lamprey.

GALL-INSECT. A claſs of animals of various ſhapes, ſizes, and colours, found on the ſtalks and branches of trees, ſhrubs, and perennial plants.

The inſect which forms and reſides in the Gall-nut is furniſhed with a certain implement, by means of which it penetrates into the bark of the tree, or into that ſpot which is juſt begun to bud, and there ſheds a drop of corroſive fluid into the cavity. Having thus formed a receptacle for it's eggs, it there depoſits them, and dies ſoon after. The heart of the bud being thus wounded, the circulation of the nutritive juice is interrupted; and the fermentation thereof, with the poiſon injected by the fly, burns the adjacent parts, and alters the natural colour of the plant. The juice or ſap, turned back from it's natural courſe, extravaſates, and flows round the egg; after which it ſwells and dilates by the aſſiſtance of ſome bubbles of air, which gaining admiſſion through the pores of the bark, run in the veſſels with the ſap. The external coat of this excreſcence is dried by the air, and aſſumes a roundiſh figure. This little ball receives it's nutriment, growth, and vegetation, as the other parts of the tree, by ſlow degrees, and forms what we call the Gall-nut. The worm which is hatched within this ſubſtance undergoes various transformations, till at laſt it acquires wings, and emancipates itſelf from it's confinement.

The Gall-Inſects, whoſe ſpoils are converted to many uſeful purpoſes, are bred on a kind of Aſiatic oak. But, beſides theſe, animals of a ſimilar kind are met with on a variety of other trees, ſhrubs, and plants. Many, however, have referred them to the vegetable kingdom, and denied their relation to the animal; and, among the reſt, the accu-

rate

late Count Marſigli, after very attentively examining the Gall-Inſects of one ſpecies, remained ſeemingly convinced that they were real vegetable excreſcences.

Indeed, theſe creatures have ſo little about them to attract the obſervation even of the curious, that they might probably have remained much longer unregarded, were it not that they multiply ſo prodigiouſly on ſome fruit-trees: the peach-tree, in particular, is ſometimes in a manner covered with them, and theſe of more than one ſpecies; ſome being of the globular kind, and others of the boat figure. The branches, thus covered, look rough and ſcabby; and gardeners, ſenſible that, whatever the ſubſtances are, they muſt be nouriſhed at the expence of the juices of the tree, have ſet about inventing means for their deſtruction. Orange-trees, which are frequently full of theſe inſects, firſt excited the attention of the more curious obſervers of ſuch minute parts of nature. Theſe are principally of that kind whoſe figure repreſents an inverted boat; and on them Meſſ. de la Hire and Sedileau made a ſet of curious experiments, which were publiſhed in the Memoirs of the Academy of Paris. But though it muſt be confeſſed that many ſpecies of theſe little animals are injurious to fruit-trees, there are ſome kinds of them whoſe uſe and value fully compenſate for this loſs; ſince it is from one ſpecies of theſe little creatures that the inhabitants of ſome places make ſuch great gains, gathering a harveſt of them without the expence of planting or cultivating. The kermes, ſo well known by name, though ſo little truly underſtood, is of this kind; and to it both the phyſician and the dyer are under very conſiderable obligations.

Liſter was, perhaps, the firſt who diſcovered the Gall-Inſects. He found theſe animals on the plum, cherry, vine, laurel, and many other trees, and calls them the patellæ of theſe trees. He appears to have been well apprized of their animal origin; and, in the year 1671, diſcovered that ſome of them would ſtrike a carnation red colour with ley of aſhes, affording not only a beautiful, but alſo a permanent tinge.

GALL INSECT FLY. This animal, which is the male of the Gall-Inſect ſpecies, is furniſhed with two wings, and poſſeſſes ſeveral peculiarities. As a great reſemblance exiſts between theſe Flies in all the Gall-Inſect claſs, a deſcription of the peach Gall-Inſect may give a proper idea of all the reſt. This animalcule, when examined with the aſſiſtance even of the beſt glaſſes, exhibits nothing on the under part of it's head analogous to the organs of other Flies, deſtined to convey their nouriſhment; nothing which bears the moſt diſtant reſemblance to the trunks of other two-winged Flies; nor any thing which can be compared to teeth. Where the teeth, if any, ought to be placed, there are only two black, ſhining hemiſpheric bodies, in every reſpect reſembling eyes. Exactly oppoſite theſe, on the other ſide of the head, and near the baſes of the antennæ, there are two other ſimilar bodies, which, notwithſtanding the ſingularity of their ſituation, cannot be taken for any thing elſe but eyes. It would therefore ſeem, that this Fly has no organs for the reception of aliments, but has two eyes in their ſtead. However, the want of theſe organs is by no means ſingular with regard to the inſect world, ſince moths and butterflies afford inſtances of it: many of theſe may be ſeen, as ſoon as they are produced from the chryſalis, in an apt ſtate to propagate their ſpecies, and depoſit their eggs; and this great end of their exiſtence being atchieved, they have no farther occaſion for life, nor any means for it's ſupport: and probably the caſe is the ſame with reſpect to theſe Flies, which, as ſoon as they are diſengaged from their coverings, ſearch out and fecundate the females; which act finiſhes the buſineſs of their lives.

Another curious circumſtance attends this ſpecies; namely, that all the Flies of this kind are produced from their ſhells backwards; whereas all other ſpecies of two-winged Flies are produced with the fore-parts of their bodies firſt: and, if we cannot aſſign a reaſon for this ſingularity in the production of the Fly now under conſideration, we can, however, eaſily perceive, that every thing is prepared and deſtined for it's convenience. In the nymphs of other Flies, all the legs are conſtantly applied cloſe to the body; whereas, on the contrary, in the nymph of the Gall Inſect Fly, the legs placed next the head, or the firſt pair, are conſtantly ranged upwards, and each of them embraces one ſide of the head. The uniform poſition of theſe legs in this direction is a proof that it is the order and courſe of nature in the production of the animal: nor are they improperly thus placed in a ſpecies which, contrary to all others, is to force itſelf backwards out of it's ſhell, ſince they aſſiſt the creature in it's operations; and, as the anterior parts of the caſes of other Flies naturally and eaſily open, to give paſſage to the animals, ſo alſo does the poſterior part of this.

GALLEY-FISH; the Meduſa of Linnæus. This animal, which is referred to the inſect tribes by Linnæus, to the eye of a heedleſs ſpectator ſeems a tranſparent bubble ſwimming on the ſurface of the ſea, or like a bladder variouſly and beautifully painted with vivid colours, where red and purple predominate as variouſly oppoſed to the beams of the ſun. It is, however, an actual Fiſh; the body of which is compoſed of cartilages, and it's ſkin filled with air, which thus keeps the animal floating on the ſurface of the water, according as the waves and winds happen to drive. Sometimes it is ſeen daſhed on the ſhore by one wave, and repelled by the next. Perſons who walk along the beach often tread on it; and the burſting of it's body yields a conſiderable report.

The Galley-Fiſh has eight broad feet with which it ſwims, or which it expands in order to catch the air, after the manner of a ſail; and, by means of theſe legs, which poſſeſs an adheſive quality, it faſtens itſelf to whatever it meets. Labat informs us, that he could never diſcover whether it moved when on ſhore, though he tried every expedient to make it ſtir; but only obſerved that it ſtrongly adhered to whatever ſubſtances he applied it.

Theſe creatures are very common in America, particularly along the coaſts of the Gulph of Mexico, where they grow to the ſize of a gooſe-egg; and, whenever the ſhore is unuſually covered with them, it is deemed the certain prognoſtic of a ſtorm. They are generally ſeen floating; and no efforts can ſink them to the bottom. All that appears above water is a bladder, clear and tranſparent as glaſs, and ſhining with the moſt vivid colours of the rainbow: beneath the ſurface are four of the feet already mentioned, which ſerve as oars; while the other four are expanded for ſails. But the moſt extraordinary circumſtance attending this creature, is the violent pungency of the ſlimy ſubſtance with which it's legs are ſmeared: if the leaſt

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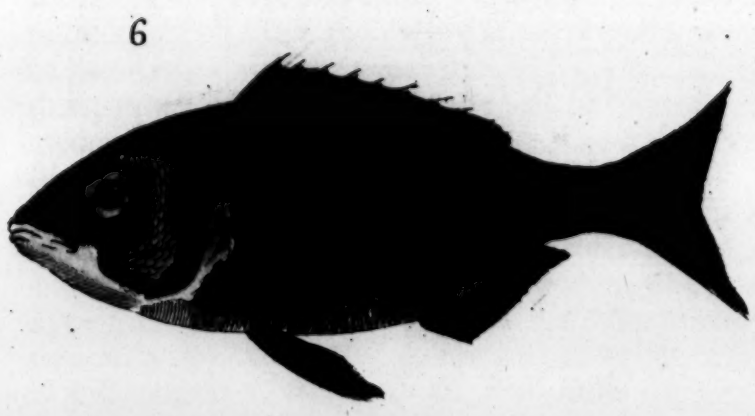
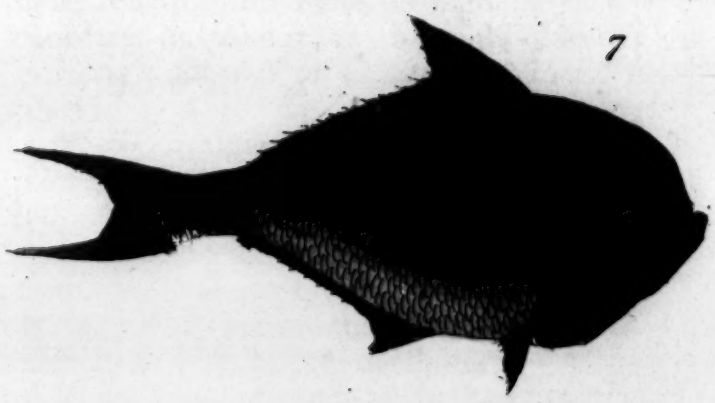




1. COMMON GALLINULE. 2. GAMBET. 3. GANNETT. 4. GARGANEY. 5. GATTORUGINE.

6. LUNULATED GILT-HEAD. 7. TOOTHED GILT-HEAD. 8. GLUTTON.

Plate LI. Published as the Act directs, by Harrison & Co. Oct.r 8 1785.

quantity of this only touch the human ſkin, ſo cauſtic is it's quality, that it burns like hot oil. The pain occaſioned by it is very acute during the heat of the day, but ceaſes towards the cool of the evening. It is very probable that, from feeding on theſe creatures, ſeveral of the Weſt Indian fiſhes contract their poiſonous quality.

GALLINÆ. In the Linnæan ſyſtem of zoology, this conſtitutes a large order of birds; the general characteriſtics of which are theſe: the beak is conic and bent; the upper mandible is arched, and extends beyond the lower; the noſtrils are half covered with a cartilaginous convex membrane; the feathers of the tail exceed twelve in number; and the feet are cloven, but the exterior and interior toes are connected to the firſt joint of the middle toe by a ſmall membrane. The peacock, the dodo, the turkey, the pheaſant, the Guinea-hen, the crax, and tetrao, belong to this order.

GALLINA MOSAMBICANA. A name under which Nieremberg has deſcribed a kind of fowl, which he ſays has not only black feathers, but alſo black fleſh and black bones; but this account Ray has fully exploded.

GALLINA PISCIS. A fiſh of the cuculus kind, more uſually known by the name of the Corax Piſcis.

GALLINACEOUS. An epithet given to a claſs of birds of the pheaſant kind, including the common cock and hen; the characters of which are theſe: their beaks are ſhort, ſtrong, and ſomewhat crooked, being adapted to the picking up of corn, the uſual food of the whole ſpecies; their bodies are large, thick, and fleſhy; their wings are ſhort, and ill adapted to extenſive flights; they breed a numerous progeny; they build their neſts on the ground; their young immediately provide for themſelves; and, laſtly, ſome are furniſhed with long ſpurs behind their legs.

GALLINAGO. A general term for heath-fowls; ſuch as the woodcock, black-cock, &c.

GALLINAGO MINOR. See SNIPE.

GALLINE. A Maſſilian appellation for the flying-fiſh, called by authors milvus and lucerna. It is a ſpecies of trigla; and is diſtinguiſhed by Artedi under the name of the trigla with the ſnout ſomewhat bifid at the end, and the lateral lines forked towards the tail.

GALLINULA. A genus of birds which ſwim in the water, and yet are deſtitute of webbed feet, or any membranes joined to their toes which might augment their breadth. Their bills are thick at their baſes, ſloping to their points; their upper mandibles, which extend far up their foreheads, are callous; their wings are ſhort and concave; their bodies are compreſſed; and their toes are long, and divided to their origin. The common moor-hen, together with a great number of other birds, both foreign and domeſtic, ſuch as the water-rail, the grinetta, and the ochropus, are of this genus.

GALLINULA ÆRYTHROPUS. A term uſed by many authors to expreſs the bird commonly called the red-ſhank in England.

GALLINULA HYPOLEUCOS. A name given by ſome naturaliſts to the becaſſine, or, as it is generally called in England, the ſand-piper. See TRINGA.

GALLINULA MELAMPUS. An appellation given by Geſner to a German bird, called, in the language of that country, rotknuſſel.

GALLINULA RHODOPUS, PHŒNICOPUS, AND OCHROPUS. Names by which Geſner, and ſome other writers, have diſtinguiſhed the common tringa; a bird whoſe legs, at different ages, and in the different ſexes, are greeniſh, yellowiſh, and reddiſh.

GALLINULA SERICA. A term indiſcriminately uſed by many authors to ſignify the grinetta and the water-rail; both birds of the moor-hen kind, but conſiderably ſmaller.

GALLINULE, COMMON. This bird, called alſo the moor-hen, or water-hen, weighs about fifteen ounces; it's length, to the end of the tail, is fourteen inches, and it's breadth twenty-two; the crown of the head, the hind-part of the neck, the back, and the coverts of the wings, are of a fine deep olive-green colour; the under-ſide of the body is cinereous; the chin and belly are mottled with white; the quill-feathers and the tail are duſky; the exterior web of the firſt primary feather, and the ridges of the wings, are white; the vent is black; the feathers juſt beneath the tail are white; and the legs are duſky green. The plumage of the female is much leſs brilliant than that of the male; and it is likewiſe inferior in ſize. During the ſeaſon of love, the plumage of this bird aſſumes a beautiful olive gloſs, and the bill becomes a full, bright red; circumſtances which naturaliſts in general have overlooked, though ſufficiently ſtriking.

The Gallinule feeds on graſſy banks and other ſituations in the vicinity of freſh waters; and even in the waters, provided they are covered with weeds. It builds in low trees and ſhrubs by the water-ſide, breeding twice or thrice a year; and, when the young are grown up, they are always compelled to ſhift for themſelves. The female lays ſeven eggs of a dirty white colour, ſlightly ſpotted with ruſt. It ſtrikes with it's bill like the hen; and, during the ſpring, has a ſhrill call. In the act of flying, it hangs down it's legs; and in that of running, flirts up it's tail very frequently. The bottom of the toes being flat and broad, it is thereby enabled to ſwim; and, from this part of it's conformation, it ſeems to be the bird which connects the cloven-footed aquatic fowl with the fin-toed.

GALLINULE, SPOTTED; the Rallus Porzana of Linnæus. This ſpecies, which is migratory in Great Britain, frequents the ſides of ſmall ſtreams, where it conceals itſelf among the buſhes. It's length is nine inches, and the expanſion of it's wings fifteen; it's head is brown, ſpotted with black; it's neck is a deep olive, ſpotted with white; and from the bill, beyond the eyes, there is a broad grey bar. The plumage of it's back is black and olive; the ſcapulars are olive-coloured, finely marked with two ſmall white ſpots on each web; and it's legs are of a yellowiſh green hue.

GALLOWAY. A peculiar breed of horſes, ſo called from the county of Galloway in Scotland, where they principally abound. Tradition reports, that this kind of horſes ſprung from ſeveral Spaniſh ſtallions, which ſwam on ſhore from ſome ſhips wrecked on the coaſt, belonging to the famous Armada; and, propagating with the mares of the country, furniſhed the kingdom with their poſterity. Theſe horſes are of a middling ſize, ſtrong, active, nervous, and much eſteemed.

GALLUS. The claſſical name of the cock.

GALLUS GRUNNIENS. An Eaſt Indian fiſh approaching to the nature of the ſcorpius marinus, and called by the Dutch knone haen. The

body is thick and rounded; the ſkin is deſtitute of ſcales, but rugged, and full of tubercles ſpotted and variegated with ſhort ſtreaks of a blackiſh hue; the head is large and thick, and extremely full of excreſcences; the noſe is large; the eyes are red; the tail is obtuſe; and the fleſh is reckoned very delicious. When this fiſh is firſt taken out of the water, it makes a very ſingular grunting noiſe; and hence it receives it's name.

GALLUS MARINUS. An appellation given by ſome naturaliſts to the doree; a fiſh more commonly known by it's claſſical name, faber.

GALLUS MARINUS, is alſo a name by which ſome authors have diſtinguiſhed the orbis piſcis.

GALLY-WORM, the Julus of naturaliſts. An inſect of the centipede kind, of which there are ſeveral ſpecies. They are furniſhed with more feet than any other inſects; and their bodies are compoſed of a great number of rings. Some of them are ſmooth, and others hairy; ſome are of a yellow colour, others are black, and others again are brown. One ſpecies has a black head, a back of a golden yellow colour, a belly of a blueiſh ſilver colour, and a vaſt number of feet like hairs. A ſecond ſpecies is entirely black, except a white line running from the head to the tail along the middle of the back. A third kind has a reddiſh head, and feet of the ſame colour; the body is a dull yellow; and the feelers, as well as the hairs near the tail, are livid. And a fourth ſpecies is of a reddiſh black hue, except that the feet and feelers are of a lighter colour. Some of theſe inſects lie hid in the moſs growing on the barks of trees; and others under ſtones, and among rubbiſh. Mouſet obſerved two ſpecies of the hairy kind; one of which was ſomewhat above an inch long, and had a tapering body of a whitiſh colour, but the hairs were black and very ſhort: the back and belly of the other ſpecies were of a livid colour, ſpotted with an unpleaſing yellow; the mouth was ſomewhat reddiſh; the eyes were black; and the hairs were grey.

All theſe animals, when touched, either contract, or roll themſelves up into balls; but they do not appear to be venomous, as many have ſuppoſed, having been frequently handled and irritated without any dangerous conſequences.

GALLY-WORM, SHINING. This inſect, which is frequently found on heaths, may be eaſily diſtinguiſhed by it's glow-worm-like luſtre. It is a native of Great Britain, and various other European countries, as well as of ſome parts of America.

GALLY-WORM, BROWN. This ſpecies has a hundred legs on each ſide, and grows to the length of two inches. The body is brown; a double line of an iron-grey colour runs along the back; the back is roundiſh; the belly is ſmooth; the ſkin is ſomewhat gloſſy; and the feelers, which are ſhort, conſiſt of five joints. It generally reſides a little below the ſurface of the earth.

GALLY-WORM, GREY. This creature is about three-quarters of an inch in length, and is furniſhed with a hundred and twenty feet on each ſide; it's back is roundiſh; it's belly is flat; and it's colour is a pale grey, except that two iron-grey lines appear on it's back, and that every joint of it's body is longitudinally ſtreaked. It conſiſts of ſixty joints; and is furniſhed with whitiſh feet. Ray calls this inſect the Gally-Worm marked with livid and white circles, found under large ſtones, and on old trees.

GALLY-WORM, RED. Ray denominates this ſpecies the long Gally-Worm. It meaſures one inch and a half; the body is very ſlender, and of a reddiſh colour; the back and belly are depreſſed; and the feet are yellowiſh, of which there are ſeventy on each ſide.

Linnæus mentions only three ſpecies of theſe inſects; namely, that with ſeventy, that with a hundred, and that with a hundred and twenty feet on each ſide.

GAMBET, OR GAMBETTA. A bird ſomewhat reſembling the common red-ſhank. The head, neck, and breaſt, are grey, and full of brown ſpots, which are largeſt on the back, and ſmalleſt on the head; the back is grey, a little inclining to a reddiſh brown colour on it's lower part, and on the wings; the belly is white; and the beak is black. This bird is common in Italy, and ſome other countries.

Pennant deſcribes one of this ſpecies, the tringa Gambetta of Linnæus, which was ſhot on the coaſt of Lincolnſhire, and was about the ſize of the green-ſhank. The head, back, and breaſt, were of an aſh-brown colour, ſpotted with dull yellow; the coverts of the wings and ſcapulars were cinereous edged with yellow; the primaries were duſky; the ſhaft of the firſt feather was white; the tail was duſky bordered with yellow; and the legs were yellow.

GAME, BLACK. See GROUSE.

GAME-COCK. See COCK.

GAME, RED. See GOR-COCK.

GAME, WHITE. See PTARMIGAN.

GANG-FISH. A name given by ſome authors to a ſmall fiſh caught in the German lakes, and exported in pickle into many parts of the world; but more generally known by the appellation of Lavaretus. The Gang-Fiſh is a ſpecies of the coregonus; and, in the Artedian ſyſtem, is diſtinguiſhed by the name of the coregonus with the upper jaw longeſt and flat, and with fourteen rays in the back-fin.

GANNET, the Pelicanus Baſſanus of Linnæus; called alſo the ſoland gooſe. This bird, which is about the ſize of the tame gooſe, weighs nearly ſeven pounds; and is upwards of three feet in length, and ſix in breadth. The bill is ſix inches long, and ſtraight almoſt to the point, where it inclines downwards; and the ſides are irregularly jagged, that the creature may hold it's prey with greater ſecurity. About an inch from the baſe of the upper mandible there is a ſharp proceſs, which projects forwards; a long furrow, reaching almoſt to the end of the bill, occupies the place of the noſtrils; and the whole bill is of a dirty white hue tinged with aſh-colour. The tongue is ſmall, and placed low in the mouth; and a naked ſkin of a fine blue colour ſurrounds the eyes, which are a pale yellow, and full of vivacity, this bird being remarkable for the quickneſs of it's ſight. From the angle of the mouth proceeds a narrow ſlip of black bare ſkin, extending to the hind-part of the head; beneath this ſkin there is another, which, like the pouch of the pelican, is dilatable, and of a ſufficient ſize to contain five or ſix entire herrings, which, during the breeding ſeaſon, it carries at once, to ſupport it's mate and young. The neck is extremely long; the body is flat, and very full of feathers; the crown of the head, and a ſmall ſpace on the hind part of the neck, are buff-coloured; and the reſt of the plumage is white, except the baſtard-wing and the greater quill-feather, which are black. The legs and toes are black; but the fore-part of both are marked with a ſtripe

a ſtripe of fine pea-green; and the tail is compoſed of twelve ſharp-pointed feathers, the middlemoſt being the longeſt.

During their firſt year, theſe birds are of a duſky hue, ſpeckled with numerous triangular white ſpots; and their colour ſtrongly reſembles that of the ſpeckled diver.

Each Gannet, if not diſturbed, will lay only one egg throughout the year; but if that be taken away, it will lay another, and then a third: a wiſe proviſion of nature to prevent the extinction of the ſpecies by accidents, and to ſupply the inhabitants of thoſe places where they breed with food. The egg is white, and ſmaller than that of the common gooſe; but the neſt is large, and compoſed of graſs, ſea-plants, or any other ſubſtances which the Gannet finds floating on the water.

As theſe birds ſubſiſt entirely on fiſh, they frequent thoſe uninhabited iſlands where their food is found in plenty, and where they are undiſturbed by the human race. The iſle of Ailſa, in the firth of Clyde; the rocks adjacent to St. Kilda, a ſmall iſland near the Orkneys; the Shelig iſlands, off the coaſt of Kerry in Ireland; and the Baſs iſle in the firth of Forth; ſeem to be their favourite reſorts: but in the laſt-mentioned iſland they are ſeen in the greateſt abundance. 'There is a ſmall iſland,' ſays Dr. Harvey, 'called the Baſs, not more than a mile in circumference. The ſurface is almoſt wholly covered, during the months of May and June, with their neſts, their eggs, and their young: it is ſcarcely poſſible to walk without treading on them. The flocks of birds on the wing are ſo numerous, as to darken the air like a cloud; and their noiſe is ſuch, that one cannot be heard without difficulty by the perſon next to him. When one looks down on the ſea from the precipice, it's whole ſurface ſeems covered with infinite numbers of birds of different kinds, ſwimming and purſuing their prey. If, in ſailing round the iſland, one ſurveys it's hanging cliffs, in every crag and fiſſure of the broken rocks may be ſeen innumerable birds, of various ſorts and ſizes, more than the ſtars of heaven when viewed in a ſerene night. If they are viewed at a diſtance, either receding or in the approach to the iſland, they ſeem like one vaſt ſwarm of bees.'

Nor are theſe fowls leſs frequent on the rocks of St. Kilda. Martin aſſures us, that the inhabitants of that ſmall iſland annually conſume near twenty-three thouſand young birds of this ſpecies, beſides an amazing quantity of their eggs: on theſe they principally ſubſiſt throughout the year; and, from the number of theſe viſitants, make an eſtimate of their plenty for the ſeaſon. They preſerve both the eggs and the fowls in ſmall pyramidal ſtone buildings, covering them with turf-aſhes, to prevent the evaporation of their moiſture. This, however, is dear-bought food, being earned at the hazard of their lives, either by climbing the moſt difficult and narrow paths, where, to appearance, they can ſcarcely cling, and that too at an amazing height over the raging ſea; or elſe, being lowered down from above, they collect their annual proviſion hanging in the midway air, placing their ſole dependence for ſafety on the uncertain footing of one perſon, who holds the rope by which they are ſuſpended at the top of the precipice. The young of theſe birds conſtitute a favourite diſh of the Scotch in general; and at Edinburgh they are ſold at one ſhilling and eight-pence each, roaſted, and ſerved up as a whet, a little before dinner.

The Gannet is a bird of paſſage. It's firſt appearance in thoſe iſlands is about the month of March; and it quits them either in Auguſt or September, according as the inhabitants take or leave it's firſt eggs. It's motions may generally be determined by the migrations of the immenſe ſhoals of herrings which at that ſeaſon pour down through the Britiſh Channel, and ſupply all Europe. The Gannet aſſiduouſly attends the ſhoals in their paſſage, accompanies them in their whole circuit round our iſland, and ſhares with our fiſhermen in this exhauſtleſs banquet. Wherever this fowl is ſeen, it is ſure to announce the arrival of the finny tribe to the fiſhermen, who immediately prepare their nets, and take the herrings by millions at a draught.

The Gannet migrates as far ſouth as the mouth of the Tagus in queſt of food, being frequently ſeen off Liſbon during the month of December, plunging for ſardinæ, fiſhes reſembling (if not actually the ſame with) pilchards.

'I have obſerved, in Caithneſs,' ſays Pennant, 'their northern migrations in the month of Auguſt, and have ſeen them paſſing the whole day, in flocks from five to fifteen in each: in calm weather, they fly high; in ſtorms, they fly low, and near the ſhore; but never croſs over the land, even when a bay with promontories intervenes, but follow at an equal diſtance the courſe of the bay, and regularly double every cape. I have ſeen many of the parties make a ſort of halt for the ſake of fiſhing: they ſoared to a vaſt height; then darting headlong into the ſea, made the water foam and ſpring up with the violence of their deſcent; after which they purſued their route. I enquired,' continues he, 'whether they were ever obſerved to return ſouthward in the ſpring, but was anſwered in the negative; ſo it appears that they annually encircle the whole iſland.'

Theſe birds are well known on moſt parts of our coaſts. In Cornwall and Ireland, they are called Gannets; and, by the Welſh, Gan. Ray ſuppoſed the Corniſh Gannet to be a ſpecies of large gull; being led into that miſtake by conſtantly ſeeing the bird on the wing, when in reality it has the appearance of the gull.

Whether the Gannet breeds in any other parts of Europe except our own iſlands, is a queſtion as yet undetermined. In America there are two ſpecies of birds belonging to this genus, which greatly reſemble the common Gannet in their general conformation and manner of catching their prey.

The Gannet, with reſpect to quickneſs of ſight, ſeems to exceed even the cormorant. It is poſſeſſed of a tranſparent membrane under the eye-lid, with which it covers the whole eye at pleaſure, without obſcuring the ſight in the ſmalleſt degree; and this ſeems a neceſſary proviſion for the ſecurity of the eyes of ſo weighty a creature, whoſe method of preying, like that of the cormorant, is by darting headlong into the water, from a height of one hundred feet or more, in order to ſeize it's prey.

This bird is ſometimes taken at ſea by faſtening a pilchard to a board, which is left floating. The Gannet inſtantly deſcends on the wood, and is either killed or maimed by the ſhock of a body from which it expected no reſiſtance. A bird of this kind, we are informed, flying over Penzance, in Cornwall, a few years ago, and ſeeing ſome pilchards lying on a fir plank in a cellar uſed for curing

ing fiſh, darted itſelf down with ſuch violence, that it ſtruck it's bill through the board, about an inch and a quarter thick, and diſlocated it's neck.

GAPERS. A name given by authors to ſuch ſhells as are denominated bivalves and chamæ.

GARAGAY. A rapacious Mexican bird of the ſize of the kite, the head and tips of the wings of which are white. It makes but ſhort flights; and being fond of the eggs of tortoiſes and crocodiles, it explores thoſe places where they are buried in the ſand.

GARDON. A fiſh of the roach kind, ſuppoſed by many authors to be but little different from the common roach of the Engliſh rivers. Some call it the Gardon ſargus, and cephalus; and others, leuciſcus.

GARDUS. An appellation given by ſome writers to that ſpecies of cyprinus called by Geſner and others the ſargus.

GAR-FISH. See Esox and Acus.

GARGENY; the Anas Querquedula of Linnæus. A freſh-water fowl of the duck kind, ſomewhat larger than the teal, but ſtrongly reſembling it in ſhape; and hence, in many places, it is called the ſummer-teal. The beak, legs, and feet, are of a deep lead-colour; the upper part of the head is duſky, but on each ſide there is a white ſtreak, drawn from the eyes to the back part; the throat and the lower part of the neck are variegated with white and reddiſh brown; the breaſt is beautifully variegated with tranſverſe undulated lines of black and duſky brown; and the belly is white or yellowiſh. The female is ſmaller than the male, and the colours on the head are leſs bright and beautiful. It has an obſcure white mark over each eye; and the reſt of the plumage is of a browniſh aſh-colour.

GARHANA. A large Brazilian fiſh of the ſhape of the common carp; more uſually known among authors by it's Brazilian name, acaraaya.

GARNET. See Limpet.

GARRULUS ARGENTORATENSIS. An appellation ſometimes given to that ſpecies of magpie commonly called the roller; a very beautifully variegated bird, found in Italy and ſome other places.

GARRULUS BOHEMICUS; the Bohemian Magpie. A name given by ſome naturaliſts to the bird more uſually called ampelis, from it's fondneſs for grapes.

GARTER-FISH; the Lipidopus. The body of this fiſh is ſhaped like a ſword; the head is elongated; the fins which cover the gills have ſeven rays; and there are only three ſcales on the whole body, two in the place of ventral fins, and the third proceeding from the anus.

GASTEROSTEUS. The name of a genus of acanthopterygious fiſhes; the characters of which, according to the Artedian ſyſtem, are theſe: the branchioſtege membrane on each ſide contains three ſmall and ſlender bones; the belly is almoſt entirely covered with bony ſcales; and the ventral fins have only two rays, one of which is prickly, and conſiderably larger than the other. There are three ſpecies of theſe fiſhes.

In the Linnæan ſyſtem, this conſtitutes a genus of the thoracici, containing eleven ſpecies, which are diſtinguiſhed by the number of their dorſal fins.

Gasterosteus is a word of Greek origin, being derived from Gaſter, the Belly; and Oſteon, a Bone; the greater part of the belly of this fiſh being fortified with bony plates.

GATTORUGIN. A fiſh of the genus of blenni, called by Linnæus blennius gattorugine. It meaſures about ſeven inches and a half in length; the body is ſmooth and compreſſed on the ſides; the belly is ſomewhat prominent; the teeth are ſlender, almoſt ſetaceous, and very cloſe ſet; between the eyes there is a ſmall cavity; and above each eye, juſt on the ſummit, there is a narrow looſe membrane, trifurcated at the top, which diſtinguiſhes this fiſh from every other ſpecies. The pectoral fins, conſiſting of fourteen rays, are broad and rounded; the dorſal fin contains fourteen ſtrong ſpiny rays, and nineteen ſoft ones; the anal fin has twenty-one rays; the extremities in every fin extend beyond their webs; and the tail, which is rounded at the end, conſiſts of twelve rays, divided towards their points. This fiſh is generally of a duſky hue, tranſverſely marked with wavy lines; the belly is of a light aſh-colour; and the lower part of the pectoral fins, as well as the ends of the ventral, are orange-coloured.

Gattorugin, Indian. The back of this ſpecies is arched,, with a ſingle fin running along it's middle from head to tail; and on the under-ſide it is hollowed or arched inwards. The teeth are extremely minute; the under-ſide of the head and the gills are marked with duſky roundiſh ſpots; the gills are pectinated on their edges; and behind them, on the under-ſide, are a pair of appendant ſtrings, each of which parts into two, and terminates in points. A ſingle fin riſes about the middle of the belly, and extends to the tail; the tail-fin is rounded; and from each ſide, exactly behind the gills, proceeds an oblong fin; the lateral lines are broken into angles; the ſcales are ſo minute as not to be perceptible by the naked eye, but on the ſides appear ſome indentions with waved lines.

This fiſh is much compreſſed ſideways, except about the head, where it is broader; and it's colour is a dull ferruginous.

GATVISCH. An American fiſh, a ſpecies of the turdus or wraſſe, of a yellow colour, and beautifully variegated with red. It is generally known among authors by it's Brazilian name, pira pixanga.

GAVIAON. A Portugueſe appellation for the caracara, a ſpecies of Brazilian hawk about the ſize of the common kite.

GAVILAN. The Spaniſh name of a ſpecies of hawk common in the Philippine Iſlands. It is ſomewhat larger than the ſparrow-hawk; the back and wings are of a yellowiſh colour; and the belly is whitiſh. It is the moſt common of all predaceous birds in that part of the world, and is extremely voracious and miſchievous.

GAVIOTA. The Portugueſe name for an aquatic fowl of the gull kind found in Brazil, and called by the natives guacu guacu. It is about the ſize of the common hen: the beak is long, ſtraight, and yellow; the head, tail, and part of the wings, are black; and the throat, breaſt, and belly, are white. The Gaviota depoſits it's eggs in the ſand, which are large, and eſteemed wholeſome food; but it's fleſh is little valued.

GAYTICPUA. An American ſerpent, ſaid to be found only in the kingdom of Razim. It grows to a vaſt ſize; and it's ſtink is ſo offenſive, that no creature is able to approach it.

GAZA GIOVANE. A ſmall ſpecies of heron,

ron, of a fine white colour, called by ſome authors ardea alba minor, or the ſmall white heron. It's weight is about a pound; the whole body is of a pure ſnow-white colour; the hind-part of the head is adorned with a ſhort creſt; round the eyes there is a naked ſpace of a greeniſh hue; and the feet are green, but ſometimes covered with blackiſh ſcales. It's fleſh is commonly eaten in Italy; but the feathers which compoſe the creſt of this beautiful bird are reckoned it's moſt valuable part.

GAZE-HOUND. See HOUND.

GAZELLA, GAZELLE, OR ANTELOPE. In the Linnæan ſyſtem, this conſtitutes a ſpecies of the capra, or goat; but other naturaliſts make it a diſtinct genus, the characters of which are theſe: the horns are annulated, or twiſted; there are eight broad cutting-teeth in the lower jaw; and the body and limbs are of a light and elegant conformation. Thus the Gazelle is made an intermediate genus between the goat and the deer, agreeing with the former in the texture of it's horns, which contain a core, and are never ſhed; and with the latter, in the elegance of it's form and ſwiftneſs of it's motion. The Gazelle being one of the fleeteſt animals in nature, it's chace is eſteemed a favourite diverſion in all thoſe parts of the world where it is found. Some ſpecies form herds of two or three thouſand; while others keep in ſmall troops of five or ſix. The varieties of this animal are numerous; but, excepting two or three, they all inhabit the warmeſt parts of the globe; their proper climates ſeem to be thoſe within the torrid zone; nor can they exiſt in the colder regions. See ANTELOPE.

GAZZA. The Italian appellation for a ſpecies of heron common in ſeveral parts of Europe; and called by many authors ardea alba major, the greater white heron. The whole body is of a ſnowy white colour; the beak is yellow; the membranes about the eyes are green; the tail is long; and the head is deſtitute of a creſt; which laſt circumſtance, added to the diſparity of ſize, ſufficiently diſtinguiſhes it from the ardea alba minor. This bird, which is ſometimes ſeen in England, has been miſtaken for the common heron become accidentally white; a phenomenon frequently obſerved in ſparrows, and ſome other birds.

GAZZETTA. A name given by Geſner to the ardea alba minor of naturaliſts, the gaza giovane of the Italians.

GAZZETTO. A fiſh of the turdus or wraſſe kind, caught in the Mediterranean, and ſold in the markets of Italy. It is thick, and pretty broad; the colour is a fine green; the fins are ſpotted; and near the anus there is a large purple tubercle. The dorſal fin of this fiſh conſiſts of twenty-four ribs or nerves; the firſt fifteen of which are rigid and prickly, the reſt being ſmooth and flexile.

GED. The Engliſh name for a ſmall ſpecies of ſnipe, uſually called the juddock; and, by authors, gallinago minima.

GELLY, SEA. A term by which naturaliſts expreſs the aſterias, or ſea-ſtar.

GENET. An animal of the weaſel kind, rather ſmaller than the martin, though ſome are larger. It reſembles the weaſel kind in it's great length compared to it's height, in having a ſoft beautiful fur, in it's feet being armed with unretractile claws, and in it's appetite for petty carnage; but it differs from them in having the noſe much ſmaller and longer, the tail tapering to a point, larger ears, and ſmaller paws.

The Genet is ſpotted with black, on a ground mixed with red and grey: it has two ſorts of hair, the one ſhorter and ſofter, the other longer and ſtronger, but not more than half an inch long on any part of the body except the tail; it's ſpots are diſtinct and ſeparate on the ſides, but, uniting towards the back, there form black ſtripes which run longitudinally. There is alſo along the back a kind of longiſh hair, reſembling a mane; and the tail is marked with rings, alternately black and white, from the inſertion to the end. Like all the reſt of the weaſel kind, it is furniſhed with glands, which ſeparate a kind of perfume reſembling civet, but which ſoon evaporates: theſe glands open differently from thoſe of other animals of this kind; for, as the latter have their apertures juſt at the beginning of the anus, the aperture of this creature is ſituated immediately under it.

Genets are eaſily domeſticated. Belonius aſſures us, that he has ſeen ſome at Conſtantinople as tame as cats; and that they are permitted to run where they pleaſe, without doing any injury: hence they have been called the cats of Conſtantinople, though they have little elſe in common with theſe animals except their addreſs in diſcovering and deſtroying vermin. Some naturaliſts pretend that they inhabit only moiſt grounds; and that they chiefly reſide on the banks of rivers, avoiding mountainous and dry places; but, with reſpect to theſe local predilections, we are not competent to ſpeak with certainty. Certain, however, it is, that the ſpecies is not much diffuſed: it is not to be found in any part of Europe, except Spain and Turky; and though it requires a warm climate for it's ſubſiſtence and propagation, it has not been diſcovered in any of the warmer regions of India or Africa. It is a mild and tractable animal; beautiful in it's colours, and valuable for it's fur; and ſeems to be one of thoſe creatures which, with proper care, might be propagated in any temperate climate.

GERBUA. An appellation ſometimes given to the jerboa, an animal which inhabits Egypt, and ſome other countries. See JERBOA.

GERENDA. An Eaſt Indian ſerpent, finely ſpotted with various colours, to which the natives of Calicut pay divine honours; and, while their deity lies coiled up, (it's uſual poſture) they proſtrate themſelves before it with ſtupid adoration. The Gerenda is likewiſe worſhipped in the ſame manner by the inhabitants of the coaſt of Mozambique in Africa.

The brilliancy of colouring in theſe reptiles, which probably procure them ſo much veneration among uncultivated nations; in countries where the principles of a juſt taſte are eſtabliſhed, would only excite diſguſt and averſion.

GER-FALCON, OR GYR-FALCON. This ſpecies of Falcon is naturally a very bold, wild, and untractable bird; but, when once reclaimed, it proves one of the moſt ſerviceable of the kind. See FALCON.

GHALGHULUNA. The Ceyloneſe name for a ſpecies of ſerpent of a pale brown colour variegated with tranſverſe ſtreaks of white, and found among rocks and ſtones.

GIAROLA. A bird of the lark kind, remarkable for it's very long heel. It is about the ſize of the common lark; the head, neck, back, and wings, are of a mottled colour, reſembling that of the quail; the general appearance of the feathers is a cheſnut brown, and their edges are variegated

with white, yellow, and red; the back-part of the head has a crown or ring of white feathers; the belly is alſo white; and the tail is ſhort, bifid, and variegated with cheſnut and white.

GIAROLO. The Italian name for a ſmall bird of the ſnipe kind, remarkable for it's white tail. It bears a ſtrong reſemblance to the bird called in England the ſtint; but it's beak is broader at the baſe, and it's legs are thicker and ſhorter. Aldrovandus gives it the appellation of the Cinclus tertius; a very indeterminate name, Cinclus being applied by different authors to ſeveral different birds.

GIBBON. An appellation given by Buffon to the long-armed ape, a very extraordinary creature, of different ſizes, being frequently four feet high. It walks erect; it is deſtitute of a tail; it's face reſembles that of a man; it's eyes are large, and ſunk in it's head; and it's ears are exactly proportioned. But it differs from all others of the monkey kind in the remarkable length of it's arms, which, when the animal ſtands erect, are long enough to reach the ground; ſo that it can walk on all-fours, and yet retain it's erect poſture.

Next to the ourang outang, this animal moſt nearly reſembles mankind, not only in it's figure, but alſo in the gentleneſs of it's manners and the docility of it's diſpoſition. It is a native of the Eaſt Indies, and particularly of the coaſts of Coromandel.

GIBBOUS FISH. A name given by Ray to the fiſh called kromrugh by the Dutch. It is ſmooth, and without ſcales; the belly is white; the fins and tail are black; and it grows to a conſiderable ſize, ſometimes to four feet. This fiſh, which is caught in the Oriental Seas, near the ſhores, is eſteemed very delicious food. It receives it's name from a remarkable prominence on it's back, like that of the perch, but conſiderably higher.

GID, or GED. A ſmall bird of the ſnipe kind, called alſo the judcock. See Snipe.

GILT-HEAD. In the Linnæan ſyſtem, this fiſh is a ſpecies of the ſparus, called by that great naturaliſt ſparus lunulâ aurea inter oculos. It is of a broad figure, compreſſed on the ſides, and ſomewhat reſembles the bream. It grows to the weight of ten pounds; and is caught in great plenty, during the ſummer months, in different parts of the Mediterranean. The back is ſharp, and of a duſky green colour; between the eyes there is an arched ſtripe, reſembling a creſcent of a gold colour, the horns of which point towards the head, and from this ſemilunar gold-coloured ſpot the Gilt-Head receives it's name. It has uſually a black ſpot at the upper angle of the cover of the gills, and another of a purple colour below them; the teeth in each jaw are oblong and roundiſh; the tail is extremely forked; the dorſal fin, which extends almoſt the whole length of the back, conſiſts of twenty-four rays; the pectoral fins conſiſt of ſeventeen rays, the ventral of ſix, and the anal of fourteen.

The Gilt-Head is one of the piſces ſexatiles, or fiſhes which haunt deep waters, or bold rocky ſhores. It feeds principally on ſhell-fiſh, which it comminutes with it's teeth before it ſwallows them. It's fleſh is reckoned extremely coarſe; and was little eſteemed by the ancient Romans, except when the creature had fed on the Lucrine oyſter.

Gilt-Head, Red. This ſpecies is about the ſame ſize as the former; it's ſhape is not very different; but it's whole body is of a red colour. At the baſe of the pectoral fins there is a ferruginous ſpot; the ſcales are large; and the tail is forked.

Gilt-Head, Toothed. This ſpecies grows to the length of twenty-ſix inches, and ten in breadth; it's general conformation reſembles that of the roach; and it's eyes are large like thoſe of quadrupeds. In the lower jaw there are two rows of ſlender, ſharp teeth, and on each ſide a ſlender canine tooth; the upper jaw is furniſhed with only one row of teeth; the apertures of the gills are very large; and the body is ſcaly. A ſingle fin extends down the centre of the back almoſt to the tail; the firſt ſeven rays are high, and the reſt low; behind the vent there is another correſponding fin; and both are entirely covered with ſcales, laid over each other. The back is black; the ſides are ſomewhat brighter; and the belly exhibits a ſilvery brightneſs.

GIMMERO. An animal ſaid to be bred between the aſs and the bull. The generality of naturaliſts deny the poſſibility of this mixture; while the natives of the Alpine countries, where this creature is found, as ſtrongly inſiſt on it's reality.

GINETTA, or GENETTA; the Viverra Genetta of Linnæus. A ſmall animal of the weaſel kind, of a tawny red colour, ornamented with ſeveral black ſpots in different parts of it's body, and having the ridge of it's back marked with a black line. See Genet.

GIRAFFE. An appellation ſometimes given to that very ſingular animal more commonly known by the name of the camelopard. See Camelopard.

GIRROCK. The common Engliſh name of the fiſh called the lacertus; a large ſpecies of garfiſh, caught in the Mediterranean, the Britiſh, and other ſeas.

GLADIUS PISCIS. An appellation given by many authors to the ſword-fiſh; called alſo xiphias.

GLAMA. A name ſometimes given to the llama, an animal of the camel kind; called alſo elapho camelus. See Llama.

GLANIS. An appellation given by ſome naturaliſts to the fiſh called in Latin ſilurus; and, in Engliſh, the ſheat-fiſh.

GLANS MARINUS. A genus of ſhell-fiſh, more commonly called balanus; and, in Engliſh, the centre-ſhell.

GLANUS, or GLANIS. An appellation given by Pliny, and other ancient writers, to that ſpecies of the ſilurus called in Engliſh the ſheat-fiſh; and diſtinguiſhed in the Artedian ſyſtem by the name of the ſilurus with four beards on the chin.

GLAREANA. A bird deſcribed by Geſner, and generally ſuppoſed to be the ſpipoletta, a ſpecies of lark; called alſo tordino by the Venetians.

GLAUCUS. The name of a genus of fiſhes which, according to Rondoletius, comprehends three ſpecies. The firſt, or more common kind, is a broad fiſh approaching to the figure of the turbot, but very thin: the colour on the back and ſides is a duſky olive; on the belly, white; and on each ſide appear a few black ſpots. The ſcales are ſmall and rounded; the mouth is large, and internally tinged with blue, the teeth being ſmall; and the tail is extremely large, and forked, the tips of the forks being varied with black. This ſpecies is commonly caught in the Mediterranean.

The ſecond ſpecies is nearly of the ſame figure as

as the former, but of a ſmaller ſize, and therefore called by ſome naturaliſts glaucidium. This fiſh has an undulated line running on each ſide from the membrane of the gills to the middle of the body, from whence it is continued ſtraight to the tail; whereas, in the common Glaucus, this line preſerves one unvarying direction.

The third ſpecies differs from the other two in having very ſtrong and ſharp teeth, and in the lateral line being much more waved: above this line the fiſh is of a deep blueiſh black colour; and, below it, perfectly white.

GLEAD. A provincial appellation for the milvus, or kite.

GLINUS. A name by which Belonius, and ſome other writers, have called the ſmall ſea-fiſh more generally known by that of dracunculus.

GLIS. In a limited ſenſe, this word only ſignifies the dormouſe; but, according to the acceptation of Linnæus, the Glires conſtitute the fourth order of the mammalia claſs of animals. The characters of the creatures belonging to this claſs are the following: they have only two fore-teeth in each jaw; they are deſtitute of the dentes canini, or dog-teeth; and the feet have toes, and are formed for leaping. Animals of this claſs comprehend the ſeveral ſpecies of the porcupine, the hare, the ſquirrel, the beaver, the mouſe, and the bat.

GLIS VOLANS, the Flying Dormouſe. The name of an animal properly of the veſpertilio or bat kind; diſtinguiſhed by Linnæus under the appellation of the ſpaſma, or veſpertilio ecaudatus, naſo foliato obcordato.

GLISSA. A ſea-fiſh of the tunny kind; but it's ſkin is perfectly ſmooth, and free from ſcales: it uſually grows to the length of two cubits, and the thickneſs of a man's body; it is of a roundiſh figure; the jaws are very rough, but deſtitute of teeth; and the tail is forked, but leſs arched or lunated than that of the tunny. This fiſh is found in deep water, at a conſiderable diſtance from ſhore; and it's fleſh is eſteemed very delicate food.

GLOBE ANIMALCULE. This very ſingular, minute, aquatic animal, whoſe ſhape ſeems to be exactly globular, without either head, tail, or fins, was firſt diſcovered by the ingenious Baker, in his microſcopical experiments. It moves in all directions, either rolling like a bowl, or gliding along ſmoothly without any convolutions. It's whole body is tranſparent, except where it is covered with circular black ſpots, which in different animalcules are found differing in their numbers; and theſe ſpots are probably either the eggs or the young. The general appearance of the body of this inſect exhibits a kind of ſhort moveable hairs or briſtles, by means of which it is extremely probable that it's motions are performed.

GLOBE-FISH. The name by which ſome ſpecies of the oſtracion are diſtinguiſhed. See OSTRACION.

GLOBOSÆ CONCHÆ. A family of ſhells, more generally called tuns: the characters of which are; that their bodies are greatly ſwelled or rounded, from which circumſtance they acquire the name of Globoſæ, or tuns; that they have ſhort turbans; that their mouths are extremely patulous; and that they are deſtitute of pillar or columella lips. The ſhells which belong to this family are the tuns, partridges, figs, harps, Perſian crowns, and melons.

GLOTTIS. A name given by many naturaliſts to a bird of the long-legged kind approaching to the figure of the red-ſhank, but larger and longer legged, and generally known by the appellation of limoſa.

GLOW-WORM. A genus of inſects of the order of coleoptera; the antennæ of which are ſetaceous; the jaws are prominent, and dentated; the eyes are ſlightly prominent; and the thorax is of a roundiſh, marginated figure.

The terms Cantharis and Cicindela have been indiſcriminately applied to the Glow-Worm; but, in fact, they form two diſtinct genera of the ſame order, comprehending ſeveral ſpecies in the Linnæan ſyſtem. The cantharis has ſetaceous antennæ; the thorax is marginated, and ſhorter than the head; the exterior wings are flexile; and the ſides of the abdomen are plicated and papilloſe. In moſt ſpecies, the thorax is depreſſed; but, in ſome, it is roundiſh. Linnæus enumerates twenty-ſix ſpecies of this genus.

The ſame author reckons fourteen ſpecies of the cicindela, diſtinguiſhed by their colours and the ſpots on their exterior wings: thus, the field, or green Glow-Worm, has five white ſpots on it's exterior wings; the black Glow-Worm, which frequents woody places, has two; the braſſy Glow-Worm, commonly found in moiſt places, has broad excavated ſpots on the wings; and the black Glow-Worm, with a round thorax, common in rocky places, has two ferruginous ſpots on theſe wings.

No two inſects differ more from each other than the male and female Glow-Worms. The male is furniſhed with wings, and is a ſmall fly; whereas the female is deſtitute of wings, and continues a large crawling Worm. The body of the male is oblong, and ſomewhat depreſſed; the wings are ſhorter than the body; the head is broad, dun, and flat; and the eyes are large and black: this inſect is by no means luminous, and therefore is not generally ſuppoſed to have any affinity to the Glow-Worm. The female is what is expreſsly called by this name: this is a very ſlow-paced animal, without wings, and in it's general conformation ſomewhat reſembling a caterpillar; the head is ſmall, flat, hard, black, and acuminated towards the mouth; the antennæ are ſhort; the legs, which are ſix in number, are moderately long; the body is flat, and compoſed of twelve rings, whereas that of the male conſiſts only of five; and the colour is duſky, with a ſtreak of white running down the back. In the day-time it exhibits none of it's diſtinguiſhing qualities; but, in the night, it becomes perfectly conſpicuous by the glowing light, or lambent flame, that is ſeen near it's tail, iſſuing from the under-part of it's body.

The common Glow-Worm, which ſo often preſents itſelf to our curioſity during the ſummer months, if carefully taken up, may be kept alive many days on freſh turfs; and will conſtantly exhibit it's luminous appearance in the dark.

The Glow-Worm is a ſluggiſh, inactive inſect, having, to appearance, no ſigns of life in the day-time, when it's light is not perceptible, though carried into a darkened room, unleſs the creature is turned on it's back, and put into motion; and, even then, it is but very faint: but, after ſun-ſet, the light begins to return, and with it the life and motion of the animal. Indeed, the motion and light of the Glow-Worm ſeem mutually dependent on each other: it never ſhines but when it's body is in ſome degree of motion; and, when it is moſt ſtrongly luminous, it's body is elongated a third more

more than in the day-time. During it's moſt lucid periods, it will ſometimes ſuddenly turn it's body round, and then the light will appear confined to a ſpace not larger than the head of a pin; but, on being touched, it will immediately extend itſelf, and the light will become as large and bright as before.

This inſect, taken in groſs, is uſed in medicine, and thought to be ſerviceable in the ſtone: and Cardan aſcribes to it an anodyne virtue.

Glow-Worm, Winged. This inſect has been well deſcribed by Aldrovandus, who aſſerts that it lays eggs which are hatched into ſmall Worms; and that theſe in time become flies, after undergoing the uſual transformations. Mouffett and Bartholine deſcribe this animal nearly in the ſame manner; but they allow only the male to have wings; while Scaliger, who contradicts this opinion, tells us that he has caught both males and females winged in the act of generation. This ſeems to be an evident proof that both ſexes are winged: nevertheleſs, thoſe who have quoted this paſſage, ſeem unconvinced of the truth of the aſſertion. Waller, however, who gives an account of theſe flies in the Philoſophical Tranſactions, obſerved them in the ſame manner, in the act of copulation, both winged, and with no other difference between them except that the female was the largeſt of the two; a common caſe with reſpect to many other inſects.

During the warmer months, this creature is ſometimes caught in houſes, flying towards the flame of a candle; and, when examined in the dark, it appears to be partially luminous. Before it is furniſhed with wings, it is frequently found in the ſhape of the common Glow-Worm; and then it always emits a kind of lambent flame. Both the male and the female, in their winged ſtate, ſhine during the ſummer months; and their light is ſometimes ſo vivid, that it is perceptible even when there is a candle in the room. It's vibrations are irregular, and it's colour is greeniſh. The luminous parts conſiſt of two ſmall ſpecks under the tail, in which the light continues for ſome time after the tail is cut off, but gradually expires. The uſe of this light ſeems to be that of directing the animal in it's courſe, and aſſiſting it in catching it's prey; to which purpoſes it appears admirably placed, the tail being eaſily bent under the belly, and then the light is thrown full on any ſurrounding object: this light the creature can conceal at pleaſure, and by that means frequently eſcapes when purſued by it's enemies.

The Winged Glow-Worm, which is of the beetle kind, is of a brown and duſky colour: it is furniſhed with hard or ſhelly wings, like other beetles; and, when theſe are expanded, a pair of very large membranaceous ones is diſcloſed to view. The head is covered with a ſort of ſhield; and under it the eyes are placed, which are black, large, and moveable; ſo that the creature can occaſionally thruſt them forwards: there are two hairy antennæ; and the legs are, like thoſe of the common fly, hard, ſhelly, and hairy.

GLUTTON; the Muſtela Gulo of Linnæus. No preciſe deſcription of this quadruped has hitherto come under our obſervation; ſome authors comparing it to the badger, others to the fox, ſome to the bear, and others to the hyæna. Linnæus ranks it among weaſels, from the ſimilitude of their teeth; though the length of it's body, the ſhortneſs of it's legs, the ſoftneſs of it's fur, it's diſagreeable ſcent, and it's inſatiable appetite, ſeem to form ſtronger lines of affinity between theſe animals. Klein, who deſcribed a creature of this kind brought alive from Siberia, aſſures us, that it was about three feet long, and one foot and a half high. On comparing theſe dimenſions with thoſe of the weaſel tribe, we ſhall find that they approach more nearly to the claſs juſt mentioned than any other. In the conformation of it's noſe, ears, teeth, and long buſhy tail, the Glutton entirely reſembles the weaſel; and, as to it's ſuperior thickneſs and corpulence, they very naturally ariſe from it's inſatiable voracity, which is ſo remarkable, that from that circumſtance the animal receives it's name.

The Glutton is found in the northern parts of Europe and Siberia, as well as in thoſe of America, where it is called the carcajou. It's body is long and thick; it's legs are ſhort; along the back it is of a black colour, but it's ſides are a reddiſh brown. It's fur is held in the higheſt eſtimation on account of it's ſoftneſs and beautiful gloſs; it's tail is pretty long and buſhy; it's legs and claws are better adapted for climbing trees than running along the ground; and, conſequently, it catches it's prey rather by ſurprize than purſuit.

Indeed, ſcarcely any of the long-bodied animals truſt to their ſpeed: knowing their own incapacity to overtake their prey through celerity, they either creep upon it in it's retreats, or lie in ambuſh, and ſeize it with a bound. The Glutton, from the conformation of it's legs and the length of it's body, muſt neceſſarily be extremely ſlow; and, conſequently, it's only reſource conſiſts in taking it's psey by ſurprize. All the reſt of the weaſel kind, from the ſmallneſs of their ſize, are better adapted for a life of inſidious rapine than this; they are qualified to purſue their prey to it's retreats; they can lurk unſeen among the branches of trees, and hide themſelves with facility under the leaves. But the ſize of the Glutton prevents it from gaining admiſſion where other animals can retire; and, for the ſame reaſon, it with more difficulty lurks unſeen: hence, it's only reſource is that of climbing a tree, which it effects with eaſe; and there it waits with patience till ſome large animal paſſes underneath, on which it ſuddenly darts with unerring aim, and ſeldom fails to conquer.

In North America, this voracious creature is frequently ſeen lurking among the thick branches of trees, purpoſely to ſurprize the deer, with which the extenſive foreſts of that quarter of the globe abound. Endued with a degree of patience equal to it's rapacity, the Glutton ſingles out ſuch trees as are marked by the teeth or antlers of the deer; and ſometimes watches, in ſilent expectation, for ſeveral days together. If it finds that theſe animals either cautiouſly avoid the place, or have forſaken that part of the country, it then deſcends with reluctance, purſues the beaver to it's retreat, or even commits itſelf to the liquid element in queſt of fiſhes. But ſhould it happen that, by long attention, and keeping cloſe, at laſt the elk or reindeer ſhould fall into the ambuſcade, the famiſhed Glutton darts down upon the hapleſs animal, and ſticks it's claws between it's ſhoulders, where they remain unalterably fixed. In vain does the large, but timid victim, encreaſe it's ſpeed, or threaten with it's branching horns; the Glutton remains obſtinately in poſſeſſion of it's prize, eats through the neck, and at laſt rends the large blood-veſſels which are ſituated in that part.

Travellers,

Travellers, when croſſing thoſe deſerted foreſts, frequently obſerve pieces of the ſkin of the Glutton ſticking to ſuch trees againſt which it has been rubbed by the deer in it's flight. But as this animal's voracity is greater than it's feelings, it never ſeizes without ſubduing it's prey. When, therefore, the deer, wounded, and faint with the loſs of blood, ſubmits to it's fate, the Glutton compenſates for it's former abſtinence by it's preſent voracity.

It is really aſtoniſhing to conſider how much one of theſe animals is capable of eating at one time. That which Klein ſaw, though deprived of both air and exerciſe, taken from it's native climate, and labouring under ill health in conſequence of theſe changes, nevertheleſs devoured thirteen pounds of fleſh every day, and yet remained unſatisfied. It may thence be eaſily imagined how much more it would have devoured at once, after a long faſt, of food congenial to it's appetites, and in that climate moſt natural to it's conſtitution: and we are accordingly informed, that, from being a lank, thin animal, it's natural figure, it then eats ſuch immoderate quantities, that it's belly is diſtended, and it's whole ſhape in a great meaſure altered. Having enjoyed this voracious repaſt, it becomes incapable of any animal function, lying in a ſtate of torpidity cloſe to the animal it has killed; and in this ſituation it continues for two or three days. Being thus reduced to a ſtate both loathſome and helpleſs, it derives it's chief protection from it's horrid ſtench, which few animals dare to approach; and for this reaſon it is enabled to continue eating and ſleeping alternately till it's prey is wholly conſumed; and then it aſcends ſome tree in order to look out for freſh adventures.

Like many others of the weaſel tribe, the Glutton ſeems to prefer the moſt putrid fleſh to that newly killed; and, were it's ſwiftneſs and ſtrength equal to it's rapacity, it would ſoon thin the foreſt of every other living creature. But, fortunately for it's fellow quadrupeds, this animal is ſo ſlow, that the beaver alone is inferior to it in ſpeed: this creature, therefore, it frequently purſues on land; but the beaver generally makes good it's retreat, by taking to the water, in which element the Glutton can by no means exiſt.

A life of neceſſity is generally productive of fertile invention: and accordingly the Glutton, continually preſſed by the calls of hunger, and poſſeſſing neither ſwiftneſs nor activity to gratify that appetite, is obliged by ſtratagem to make up for the defects of nature. It often examines the traps and ſnares laid for other animals, in order to anticipate the fowler. It is ſaid to practiſe various arts, in order to procure it's prey; to ſteal on the rein-deer in their retreats; to lie in wait for ſuch animals as have been maimed by the hunters; to purſue the iſatis while providing for it's own wants; and, when that animal has run down it's prey, to ſeize on it, and even ſometimes to devour the original provider. When every other expedient fails, the Glutton condeſcends to ſearch out graves; and, after digging up and feeding on the inhumed bodies, devours the very bones. For theſe reaſons this carnivorous animal is held in utter deteſtation by the natives of thoſe countries it inhabits, who uſually term it the vulture of quadrupeds. But, though thus obnoxious and diſguſting to man, theſe creatures do not ſeem at all to dread him; for, according to Gamelin, one of them advanced boldly and calmly to a ſituation where ſeveral perſons were at work, without betraying the ſmalleſt apprehenſion, or attempting to run away, till it had received ſeveral blows, which at laſt totally diſabled it.

The Glutton, like all the reſt of it's kind, is a ſolitary animal; and is never ſeen in company, except with the female, with which it couples in the middle of winter. The latter goes with young about four months, and brings forth two or three at a time.

Gluttons burrow in holes like weaſels: the male and female are generally ſeen together; and both are equally reſolute in defence of their young. On ſuch occaſions the boldeſt dogs are afraid to approach them, as they fight with the greateſt obſtinacy, and bite with the utmoſt ſeverity: however, as they are unable to eſcape by flight, the hunters generally come up to the aſſiſtance of the dogs, and eaſily overpower them. Their fleſh, as may eaſily be ſuppoſed, is not very delicate, but their ſkins amply recompenſe the hunters for their toil and danger. Their furs poſſeſs the moſt beautiful luſtre imaginable; and are preferred before all others, except thoſe of the Siberian fox and the ſable.

GNAPHEUS. An appellation given by Athenæus, and other Greek writers, to the tench.

GNAT. A genus of the order of diptera, or two-winged inſects, whoſe mouths are furniſhed with briſtly ſtings, included in flexile ſheaths.

Gnats proceed from little worms uſually found at the bottoms of ſtagnant waters. The manner in which theſe inſects lay their eggs is peculiarly curious and intereſting: after having depoſited a proper number on the ſurface of the water, they ſurround them with a kind of unctuous matter, which prevents their ſinking; but, at the ſame time, connects them to the bottom by threads, to prevent their floating away at the mercy of every breeze. Thus theſe inſects, in their egg ſtate, reſemble buoys fixed by anchors. As they approach towards maturity, they ſink deeper; and at laſt, when they leave the eggs, and become worms, they creep at the bottom. After this, they form lodgings of cement, which they affix to ſome ſolid bodies at the very bottom of the water, unleſs they accidentally meet with pieces of chalk, which, being of a ſoft and pliant nature, give them an opportunity of ſinking retreats for themſelves, where the claws of cray-fiſh only can moleſt them. The worm afterwards changes it's form: it appears with a large head; and a tail inveſted with hair, and moiſtened with an oleaginous fluid, which ſerves to ſuſtain it's body, and to tranſport it from one place to another. When the oil with which the tail is moiſtened begins to grow dry, the inſect diſcharges an unctuous humour from it's mouth, which it ſheds over it's tail; and, by virtue of this, it is enabled to tranſport itſelf from place to place without being incommoded by the water. The Gnat, in it's ſecond ſtate, is, properly ſpeaking, a kind of nymph, which is it's introduction into a new ſtate of being. In the firſt place, it diveſts itſelf of it's ſecond ſkin; in the next, it reſigns it's eyes, it's antennæ, and it's tail; and, in ſhort, it ſeems actually to expire. However, from the remains of the amphibious animal a little winged inſect ariſes, active in a high degree, and whoſe whole ſtructure is a juſt object of our admiration: it's little head is adorned with a plume of feathers; and it's whole body is inveſted with

ſcales and hair, in order to ſecure it from the inclemency of the weather; and it makes trial of the activity of it's wings, by rubbing them either againſt it's body, or it's broad ſide-bags, which keep it in equilibrium.

But no part of this inſect is more remarkable, or of more importance, than it's trunk, which may juſtly be deemed one of nature's maſter-pieces; and is ſo very ſmall, that it's extremity can ſcarcely be diſcerned by the aſſiſtance of the beſt microſcope that can be procured. That part which is at firſt obvious to the eye, is only a long ſcaly ſheath under the throat: at the diſtance of near two-thirds of it's length, there is an aperture through which the animal darts out four ſtings, and afterwards retracts them; one of which, however ſharp and active it may be, is no other than the caſe that contains the other three, for whoſe reception it is furniſhed with a long groove. Theſe ſtings are ſharpened on both ſides; they are likewiſe barbed; and have a vaſt number of cutting-teeth towards their points, which are reverted, and fine beyond expreſſion. When all theſe darts are thruſt into the fleſh of animals, ſometimes one after another, and at others all at once, the blood and humours of the adjacent parts are unavoidably extravaſated; on which tumours enſue, whoſe little orifices are ſoon cloſed up by the compreſſion of the external air.

When the Gnat, by means of the extremity of it's caſe, which it uſes inſtead of a tongue, has taſted any fruit, fleſh, or juice, that it has diſcovered; if it be a fluid, it is ſucked up without the protruſion of the darts; but, in caſe the leaſt reſiſtance is made by the obſtruction of fleſh, or other hard ſubſtances, the inſect exerts it's ſtrength, and penetrates it if poſſible with it's weapons. This being atchieved, it draws it's ſtings into their ſheath, which is applied to the wound, in order to extract, as through a reed, the juices which are therein incloſed.

But though the Gnat is very active and troubleſome in the ſummer months, during winter it ceaſes to receive any food; and ſpends all that tedious ſeaſon either in quarries or caverns, which, at the return of ſummer, are abandoned for ſome commodious ford, or ſtagnant water, where it may produce it's kind. Indeed, the young brood is ſometimes ſo numerous, that the very water is tinged, according to the colour of the ſpecies, which is very various, and in general very beautiful.

Nothing, however, is more curious in the hiſtory of this animalcule, than it's method of propagation. Though all inſects of the Gnat kind are pretty ſimilar in their conformation and general appearance, they differ widely from each other in the manner in which they are produced: for ſome are viviparous, others oviparous; ſome are males, and unite with the females; others are females, requiring the impregnation of the males; and ſome, though of neither ſex, produce young without any copulation or contact whatever. This is indeed one of the greateſt irregularities in the hiſtory of nature; but it is nevertheleſs true. A Gnat, ſeparated from the reſt of it's kind, and incloſed in a glaſs veſſel, with air ſufficient to keep it alive, will produce young; which alſo, when ſeparated from each other, will be the parents of a numerous progeny. Thus, through five or ſix generations, will theſe extraordinary animals propagate without the aid of copulation, and without any congreſs between the males and females; but, after the manner of vegetables, the young burſting from the bodies of their parents without any previous impregnation. At the ſixth generation, however, the propagation is ſuſpended; the Gnat no longer produces it's like from itſelf alone, but requires the acceſs of the male to give it another ſucceſſion of fecundity.

The European Gnats give the human ſpecies but little moleſtation; they are ſometimes, indeed, heard humming about our beds in the night-time, and retard the approaches of ſleep by the apprehenſions which they naturally excite: but the caſe is very different in the leſs populous and cultivated regions of America, where the waters ſtagnate, the climate is warm, and where they are produced in inconceivable multitudes. There the whole atmoſphere is frequently filled with clouds of thoſe famiſhed inſects, of different ſizes, from the length of ſix inches, to a minuteneſs only diſcernible by the aſſiſtance of the microſcope. The ardour of the meridian ſun is too potent for their conſtitutions, and they therefore ſhun his influence: but when the evening ſhades prevail, neither artifice nor flight can poſſibly ſhield the wretched inhabitants from their attacks; for, though myriads are deſtroyed, myriads more conſtantly ſucceed them, and produce unceaſing annoyance. The native Indians, who anoint their bodies with oil, and are from their infancy habituated to the depredations of theſe creatures, find them far leſs troubleſome than thoſe perſons who are but newly arrived from Europe: the former ſleep in their cottages having their bodies almoſt entirely covered with theſe inſects, and enjoy, notwithſtanding, uninterrupted repoſe; while the latter are almoſt driven to diſtraction, neither remaining quiet by day, nor ſleeping by night,

The numbers of ſpecies of the Gnat kind, including the larger and ſmaller ones, are beyond the art of the moſt ſkilful naturaliſt to enumerate. Derham obſerved near forty different ſpecies in the vicinity of Upminſter in Eſſex; but thoſe which arrive at a ſize capable of being remarked with the naked eye are by no means innumerable. All the Gnat tribe have a long cylindric body, compoſed of eight wings; the corſelet is ſhort, but large, in proportion to the ſize of the fly; and to this member are affixed ſix legs, the wings, and the balancers: four ſtigmata are alſo found in this part, as is the caſe in other flies; the two firſt of which are placed near the head, and have ſometimes been miſtaken for ears.

Linnæus deſcribes the ſix ſubſequent ſpecies.

GNAT, DUSKY, with a forked ſnout. This ſpecies is aſh-coloured, and moderately large: it has no points on the wings; and from between the jaws, or more properly from the trunk, proceeds a forked dart. Ray ſuppoſes this to be the female of the domeſtic tipula, becauſe it neither bites nor ſtings.

GNAT, ASH-COLOURED, with eight rings on the body. This is the common Gnat, which is ſeen in almoſt every country; and is too well known to require any farther deſcription.

GNAT, with water-coloured wings, marked with three black ſpots. This ſpecies is by ſome authors called the leaſt Gnat with blackiſh ſpots; the body is of a browniſh colour, and no bigger than a ſmall flea; and the wings are white, narrow, and marked on their exterior edges with three dark ſpecks.

GNAT, BLACK, with water-coloured wings, black feet, and a white ring. This ſpecies abounds

in Lapland, where they make a prodigious humming in the duſk of the evening. They bite with great ſeverity, generally attacking the eyes, mouth, and face; and are not eaſily deterred, notwithſtanding the minuteneſs of their ſize, which does not exceed that of a flea.

Gnat, Downy, with wings partly duſky. This variety is found in gardens, where they fly unceaſingly, and ſeem to delight in the ſmell of flowers. Ray calls this the Gnat ſhaped like the ſilkworm moth, all over ſetaceous and black, with the hinder part of the body blunt, and red ſides.

Gnat, Black, with a duſky body and a white forehead. In the Tranſactions of Upſal, this ſpecies is called the leaſt blood-ſucking fly with white wings. It is extremely troubleſome to horſes in the ſummer ſeaſon, getting under their hair, and extracting their blood. The feelers reſemble threads, though the inſect is ſhaped like a fly; the head, feet, and breaſt, are black, except that the ſides of the latter are aſh-coloured, and that there is a white ſpot above and below the eyes.

GO. An appellation given by ſome authors to the common rock-fiſh, or ſea-gudgeon.

GOAT. In the Linnæan ſyſtem of zoology, the Goat makes a diſtinct genus of the order of pecora: the diſtinguiſhing characters of which are; that the horns are hollow, turned upwards, and annulated on their ſurfaces; that there are eight cutting-teeth in the lower jaw, and none in the upper; and that the male is generally bearded.

The Goat is one of thoſe domeſtic animals whoſe value is overlooked, becauſe the ſheep ſo far exceeds it: thus the aſs is of little conſequence, becauſe the horſe ſupplies it's place. Were the horſe or the ſheep removed from nature, the aſs and the Goat would be invaluable; and the ſame arts would immediately be beſtowed in cultivating and improving their kinds, that the higher orders of animals experience. But, in their preſent neglected ſtate, they vary little from the wild animals of the ſame kind: man has left them their primitive habits and forms; and, the leſs they are indebted to his aſſiduity, the more they receive from nature.

The Goat, viewed in every poſſible light, ſeems better adapted for a life of ſavage liberty than the ſheep. It is naturally more lively, and poſſeſſed of more animal inſtinct; it more readily attaches itſelf to man, and appears ſenſible of his careſſes: it is alſo ſtronger, ſwifter, more courageous, more playful, and more capricious and vagrant, than the ſheep; it is with difficulty confined to a flock; it chuſes it's own paſtures; and loves to ſtray from it's companions. It is fond of climbing precipices; it delights in approaching the very brink of danger; and it is often ſeen ſuſpended on an eminence overhanging the ſea, and even to ſleep in that ſituation in perfect ſecurity, Nature, indeed, has in ſome meaſure fitted this animal for traverſing theſe declivities with eaſe: it's hoofs are hollow underneath, and their edges ſharp; ſo that it can walk on the ridge of a houſe with as much facility as on level ground. When two Goats are yoaked together, as is frequently practiſed, they will, as if by conſent, take the moſt hazardous leaps, and yet ſo well time their mutual efforts, that they will rarely miſcarry in the attempt.

As Goats are hardy creatures, and very eaſily ſuſtained, they are for that reaſon chiefly the property of the poor, who have no paſtures to ſupply more delicate animals. They prefer the neglected wilds to the cultivated fields of art; they chuſe the heathy mountains, or the ſhrubby rocks; the tops of the boughs, or the tender bark of young trees, are their favourite food; they bear immoderate heat much better than ſheep; and are neither terrified at a ſtorm, nor incommoded by rain; ſeeming only affected by immoderate cold, which produces the vertigo, a diſeaſe often fatal to theſe animals. The inconſtancy of their nature is perceivable in the irregularity of their gait; they go forward, ſtop, turn, approach, and fly, merely from caprice and the extreme vivacity of their diſpoſitions.

The Goat produces but two or three at a time; and though it degenerates in warm climates, and is much ſmaller, it nevertheleſs becomes more fruitful, and generally brings forth three, four, or even five, at a ſingle delivery. The buck is capable of procreating it's kind at the age of twelve months, and the female at that of ſeven: however, the fruits of this premature generation are weak and defective; and their beſt breeding time is generally delayed till the age of two years. One buck is ſufficient for a hundred and fifty goats: his appetites are exceſſive; but this ardour brings on a ſpeedy decay, ſo that he is enervated in four years at moſt, and even becomes old before he arrives at ſeven. The Goat, in ſome places, bears twice a year; and, like the ſheep, continues five months with young.

The milk of the Goat is ſweet, nutritive, and medicinal; leſs liable to coagulate on the ſtomach than that of the cow, and therefore preferable when the digeſtion is weak. The peculiarity of this animal's food communicates a flavour to it's milk different from that of the ſheep or the cow; for as it generally feeds on ſhrubby paſtures and heathy mountains, there is a particular taſte in it's milk which is very grateful to ſuch as are fond of that aliment.

In ſeveral parts of Ireland, and the Highlands of Scotland, Goats conſtitute the chief poſſeſſions of the natives. On thoſe mountains where no other animals could ſubſiſt, theſe creatures glean a ſufficient maintenance, and ſupply the hardy inhabitants with a varied luxury. Their beds are made of Goats ſkins, which are ſoft, clean, and wholeſome; they feaſt on their milk, and convert one part of it into butter, and another into cheeſe: their fleſh, however, is a delicacy they ſeldom taſte, it being reckoned too expenſive. The kid is conſidered, even by the epicure, as a dainty; and the fleſh of the Goat, when properly prepared, is preferred by ſome to veniſon.

Thus, even in the wildeſt ſolitudes, the poor experience comforts of which the rich have not been cruel enough to diſpoſſeſs them. In thoſe mountainous retreats, where the landſcape preſents only a ſcene of rocks, heaths, and ſhrubs, that proclaim the wretchedneſs of the ſoil, theſe ſimple people have their feaſts and their enjoyments: their truſty flocks of Goats attend them in thoſe aweful ſolitudes, and furniſh them with all the neceſſaries of life; while their remote ſituation happily keeps them ignorant of greater luxuries.

Goats are found in almoſt every part of the world, and ſeem ſuited to the neceſſities of mankind in both extremes: they are fattened in the ſame manner as ſheep; but, notwithſtanding every poſſible precaution, their fleſh is neither ſo good nor ſo ſweet, in our climates, as mutton. But, between the tropics, the caſe is very different; the

mutton

mutton there becomes flabby and lean; while the fleſh of the Goat ſeems rather to improve; and, in ſome places, the latter is much preferred to the former.

Goats are ſo injurious to young plantations, that it would be imprudent to draw them from their beloved rocks, unleſs ſome method could be contrived of preventing them from cropping the tender boughs, or tearing the bark from young trees. Pennant informs us, that a gentleman of Merionethſhire broke the teeth of his Goats ſhort off with pincers, in order to preſerve his trees: but this cruel policy ought not to be recommended; eſpecially when thoſe animals are preſerved for the ſake of their milk, the ſalubrity of which, it is ſuppoſed, ariſes principally from their promiſcuous feeding.

The Goat, in various inſtances, contributes to the neceſſities of human life. From it's hair, petukes, and even cloth, are made; it's ſkin is uſeful for a variety of purpoſes; it's horns are manufactured into handles for various inſtruments; and it's ſuet is in great eſteem for making candles, which are far ſuperior in whiteneſs and durability to thoſe made from that of the ſheep, or the ox, and conſequently bring a better price. The value of it's fleſh and milk is well known; the latter being eſteemed an excellent ſuccedaneum for aſſes milk. In many of the mountainous parts of Scotland and Ireland, this milk is turned into whey, and has been ſurprizingly efficacious in thoſe complaints where coolers and reſtoratives are neceſſary. Patients reſort to many of thoſe places during the proper ſeaſon; and, from the combined aids of this ſalutary and innocent medicine, pure air, and exerciſe, they frequently experience a return of health, and a renovation of conſtitution, when all other expedients prove abortive.

The rutting-ſeaſon of Goats is from the beginning of September till November: their exceſſive venery is a bar to their longevity; and accordingly they ſeldom live beyond their twelfth year.

Goats were held in great veneration by the inhabitants of Mendes, in Egypt; and the natives of that country in general never offered them in ſacrifice, becauſe their god Pan was repreſented with the feet and legs of a Goat. Under the ſymbol of this animal, they imagined that they worſhipped the principle of the fertility of all nature, expreſſed by that divinity. However, among the Greeks, Goats were ſacrificed, on account of their deſtroying their vines. Venus uſed frequently to ride on a Goat. The popular Venus, ſays Pauſanias, is repreſented as mounted on a Goat; and the marine Venus riding through the waves on a Sea-Goat.

Goat, Domestic. The horns of the tame Goat, which have a curvature outwards towards their extremities, have been found to meaſure three feet five inches in length, and three feet two inches between tip and tip. The colour varies extremely; and the hair, in ſome, is long and rough; but, in others, ſmooth and ſhort.

The tame Goat inhabits moſt parts of the world, either natively, or naturalized. It endures all kinds of weather; and is found in Europe as high as Wardhus in Norway, where it feeds, during the winter ſeaſon, on moſs, the bark of fir-trees, and even of logs intended for fuel; and it thrives equally well in the hotteſt parts of Africa, in India, and the Oriental Iſlands. The Goat, however, is not a native of the New World, having been introduced there by the original diſcoverers of that continent; for the Americans were unacquainted with all domeſtic animals, ſheep, goats, hogs, cows, and horſes. The increaſe of theſe creatures in all parts of that continent, eſpecially it's ſouthern diviſion, is really prodigious. But, in the rigorous climate of Canada, the Goat is too delicate to perpetuate it's race; for which reaſon new ſupplies are annually imported, in order to prevent it's extinction.

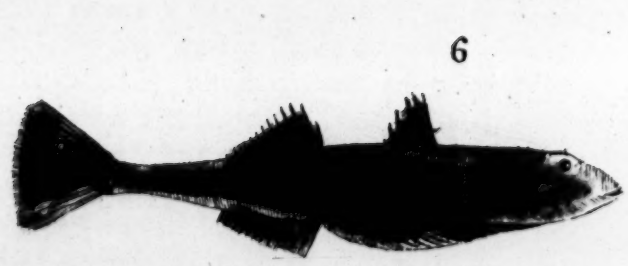
Goat, Ibex; the Capra Ibex of Linnæus. This animal has large knotted horns reclining backwards, ſometimes three feet in length. The eyes are large; the head is ſmall; and the male has a duſky beard. The hair is rough, and of a deep brown colour mixed with ſome hoary; the legs are partly black, and partly white; the ſpace under the tail, in ſome, is tawny, and in others white; the belly is a tawny white; the body is ſhort, thick, and ſtrong; the legs are thick; the tail is ſhort; and the hoofs are very narrow. The female is leſs than the male; and her horns, which are ſmaller, have fewer knobs on the upper ſurface.

The Ibex inhabits the Carpathian and Pyræan Mountains, the country of the Griſons, the Rhætian Alps, and various countries of Aſia. Theſe creatures are exceſſively wild, and difficult to be ſhot; and, in very ſevere weather, they deſcend from the ſummits of thoſe mountains where they uſually reſide, in queſt of food. During the rutting-ſeaſon, the males make a horrible noiſe; and the females ſeparate, at the time of parturition, and retire to the ſide of ſome ſtream, in order to bring forth. Being very ſtrong and intrepid, the chace of theſe animals is of courſe both difficult and dangerous: they ſometimes precipitate the incautious hunters from the rocks; and, when preſſed hard, they fling themſelves down the higheſt precipices, and, pitching on their horns, frequently eſcape unhurt. Their fleſh is eſteemed wholeſome; and their blood was once greatly reputed in pleuritic caſes.

Goat, Caucasan. This animal is only a variety of the ibex. It has ſmooth black horns, ſharply ridged on their upper parts, and hollowed on their exterior ſides; they bend backwards conſiderably, are much hooked at their extremities, and approach a little at their points. The chin is furniſhed with a great duſky beard, mixed with cheſnut colour; the fore-part of the head is black; the ſides are mixed with brown; and the reſt of the animal is grey, or grey mixed with ruſt-colour. Along the ridge of the back runs a black liſt; and the tail is alſo black.

Theſe animals are ſuperior in ſize to the largeſt He-Goats; but, with reſpect to form and agility, they reſemble ſtags. They inhabit the lower mountains of Caucaſus and Taurus, Aſia Minor, and, moſt probably, the mountains of India. They abound on the barren hills of Laar and Khorazan, in Perſia; and, according to Monardus, are alſo found in Africa. They are creatures of ſurprizing agility. The above naturaliſt was witneſs to the manner in which one of them ſaved itſelf by falling on it's horns: he ſaw it leap from a high tower, precipitate itſelf on it's horns, then ſpring on it's legs, and leap about, without ſuſtaining the ſmalleſt ſeeming injury.

The Caucaſan Goat is one of thoſe animals which yields that once valued alexipharmic the bezoar-ſtone; a concretion formed of many coats, incruſting a nucleus of ſmall pebble, ſtones of fruits, bits of ſtraw, or buds of trees. The incruſting coats are created from the vegetable food of



1. COMMON GOAT. 2. SYRIAN GOAT. 3. GOATSUCKER. 4. LESSER GOATSUCKER.
5. BLACK GOBY. 6. SPOTTED GOBY.

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of the animal, eſpecially the rich, dry, and hot herbs, of the Perſian and Indian mountains. The virtues of this ſubſtance are now exploded; and it is reckoned only an abſorbent, and that of the weakeſt kind.

Since the diſcovery of this ſpecies of Goat, for which we are indebted to Profeſſor Guildenſtaedt, it has generally been ſuppoſed to be the origin of the tame or domeſtic breed, as there is the greateſt conformity between it's horns and thoſe of the domeſtic kinds; unleſs it may be imagined that the latter have loſt the knots, from their mode of life. The ibex was formerly regarded as the parent ſtock; and between it and the Caucaſan a valuable breed may be produced.

Goat of Angora. The Natolian Goat, or, as Buffon calls it, the Goat of Angora, has longer ears than the domeſtic breed, and broader in proportion. The horns of the male are about the ſame length as thoſe of the European Goat, but black, and very differently turned, proceeding horizontally on each ſide of the head, and being twiſted round after the manner of a cork-ſcrew: the horns of the female are ſhorter, and encircle the ears ſomewhat like thoſe of the ram.

Theſe animals are found only near Angora, Beibazar, and Cougua, in Aſiatic Turky. Thoſe of the laſt-mentioned place have brown or black hair; and thoſe of the two firſt places have hair of a ſilky fineneſs and ſilvery whiteneſs, in curled locks about eight or nine inches long. Their hair forms the baſis of our fine camblets, and is imported into this country in the ſhape of thread; for the Turks, from a commendable attention to the poor of their own country, will not ſuffer it to be exported raw, as the ſpinning affords employment to multitudes.

The Goat of Angora is confined to a diſtrict of two or three days journey in extent; and, if removed to another climate, it's hair becomes coarſer, and conſequently leſs valuable. The Goat-herds of Angora and Beibazar are extremely careful of their flocks, frequently combing and waſhing them; and this gives a beauty to their hair, which is unrivalled in any other part of the world.

Goat, Syrian. This ſpecies is ſomewhat larger than the European. It's ears are pendulous like thoſe of the hound, and from one to two feet in length; and ſo inconvenient are they ſometimes to the animal, that it's owner cuts them off, to enable it to feed with more eaſe. It's horns are black, bending a little forwards; and are only about two inches and a half in length. The colour of it's hair is like that of the fox; and there are two excreſcences under it's throat reſembling the gills of a cock.

Theſe animals are chiefly kept round Aleppo, in order to ſupply the natives with milk; which, as in other countries, is eſteemed wholeſome and pleaſant. They are driven through the ſtreets from April to September, after the manner of ſheaſſes in London; and their milk is ſold to the inhabitants as they paſs along.

Goat, African. This variety is very ſmall. The male is covered with rough hair; beneath the chin hang two rough hairy wattles; and the horns, which are ſhort, very thick, and triangular, lie ſo cloſe to the ſcull, that they almoſt penetrate the ſkin. The horns of the female are leſs than thoſe of the male; ſhe is deſtitute of wattles; and her hair is ſmooth.

Goat, Whidaw, or Juda. This ſpecies reſembles the common Goat, except in ſize, being no larger than the hare. It is found in Guinea, Angola, and all along the coaſts of Africa: in thoſe countries it becomes very fat; and it's fleſh is ſo much eſteemed, that it is univerſally preferred to mutton. Linnæus ſays, that this animal was originally imported from America; but certainly this muſt be a miſtake, as it has frequently been proved, that the Goat, as well as every other domeſtic creature, were entirely unknown on that continent before they were introduced by the Spaniards.

Goat, Blue. At the Cape of Good Hope, in Africa, there is found an animal called the Blue Goat, reſembling the domeſtic Goat in ſhape; but conſiderably larger, being nearly of the ſize of the ſtag. It's hair is very ſhort, and of a fine ſhining blue colour; but, when the animal is dead, it loſes much of it's beauty. It's horns are ſhorter in proportion than thoſe of other Goats, and ſpirally turned; it's beard is long and full; and it's legs are long, but well-proportioned. It's fleſh, though lean, is well taſted; but, in that plentiful country, this creature is chiefly killed on account of it's ſkin.

This ſpecies is naturally ſhy and timid, ſeldom approaching the Dutch ſettlements; but is very numerous in the uncultivated and interior parts of the country. In thoſe extenſive regions which border on the Cape, there are alſo various other ſpecies of Goats, many of which are beautifully marked with brown, white, and red ſpots.

Goat, Capricorn. The Capricorn is a variety having ſhort horns, turning forwards at their extremities, their ſides annulated, and the rings more prominent before than behind. Theſe are the principal characters of this ſpecies; and ſuch may be purely accidental, produced either by climate or food, which have a very conſiderable and ſenſible effect on animals unqueſtionably belonging to one and the ſame origin.

Goat, Siberian. This ſpecies varies both in ſize and colour. The ſkin of one of theſe animals, now in the Britiſh Muſeum, is covered with pale ferruginous hair, ſhort on the ſides, but longer on the top of the neck, and a little erect; on the ſhoulders, and along the lower ſides of the neck, the hair is fourteen inches long, beneath which is a kind of ſhort wool; and on the knees there is a bare ſpot, which ſeems to have been occaſioned by kneeling in order to lie down. The tail of this animal is ſhort; the horns are twenty-five inches long, eleven in girth in the thickeſt place, and nineteen diſtant from point to point; the mouth, the forehead, and the ears, reſemble thoſe of the ram; and the creature has no beard.

The iſland of Corſica furniſhes a variety of this ſpecies, conſiderably ſmaller, and of a deepiſh brown mixed with a ruſt-colour; the belly, rump, and hind-legs, are white; and the horns of the female are much ſmaller than thoſe of the male.

Belonius very injudiciouſly ſtiles this animal the tragelaphus, or deer; though it's horns do not fall off annually like thoſe of the ſtag. Buffon ſuppoſes it to be the ſheep in a wild ſtate; but Pennant, and ſome other writers, are of a contrary opinion.

Theſe Goats are found in the north-eaſt parts of Aſia; and in Barbary, Sardinia, Corſica, and Greece: they live on the mountains, and run with great rapidity among the rocks. Thoſe of Kamtſchatka, which are amazingly ſtrong, grow to the ſize of young ſtags: they propagate in autumn; and the

female brings forth one, and ſometimes two, at a birth.

GOAT, SHAMMOY, OR CHAMOIS. This animal is about the ſize of the domeſtic Goat, which it reſembles in many reſpects. It is naturally very wild, but eaſily tamed; and is found only in rocky and mountainous places. It is extremely lively and active; it's hair is like that of the doe; it's colour is cinereous in ſpring, dun inclining to black in autumn, and a blackiſh brown in winter; it's eyes are beautiful, round, and ſparkling; it has two ſmall horns, about half a foot long, which jet out forwards, bending a little backwards at their extremities; it's ears are elegantly placed near it's horns; and on each ſide of it's face there are two ſtripes of black, the reſt being of a whitiſh yellow colour. The fleſh of this Goat is eſteemed tolerable food; and each animal yields about ten or twelve pounds of excellent ſuet, which is convertible to many uſeful purpoſes.

Shammoy Goats are very common in Dauphiny, Piedmont, Savoy, Switzerland, Germany, Greece, and Crete. They aſſemble in flocks, from four to one hundred, diſperſed on the crags of the mountains. The full-grown males feed at ſome diſtance from the reſt, except during the rutting-time, when they approach the females, and drive away their young. They couple from the beginning of October to the latter end of November, and bring forth in March and April. The young ones follow their dams about five months, if not ſeparated before by the hunters or the wolves. They live between twenty and thirty years; and the females generally produce two, and ſeldom more than three, at a time.

Though moſt animals are known to have ſome cry peculiar to themſelves, the Shammoy has ſcarcely any; only a kind of feeble bleat, by which the parent calls it's young; but, when danger threatens, and it wiſhes to alarm the reſt of the flock, it makes a hiſſing noiſe, which is heard at a conſiderable diſtance. It is extremely vigilant, and has a quick and piercing eye. It's ſmell is alſo very diſtinguiſhing; for by it, we are told, it can diſcover any perſon at the diſtance of half a league, and give the earlieſt notice to it's companions. On the leaſt apprehenſion of danger, it utters it's hiſſing note; and having repoſed a moment after this alarm, it again looks round, and perceiving it's fears to be real, continues to hiſs, at intervals, till it has ſpread the alarm to a vaſt diſtance. During this time, it ſeems violently agitated; it ſtrikes the ground with one of it's fore-feet, and ſometimes with both; bounds from rock to rock; turns, and looks about; runs to the edge of the precipice; and, ſtill perceiving the enemy, flies with the utmoſt ſpeed. It is remarked by naturaliſts, that the hiſſing of the male is much ſharper and louder than that of the female.

The Shammoy, like the common Goat, feeds on the tendereſt herbage, and ſelects the moſt delicate parts of plants, flowers, and buds. While it feeds on ſucculent herbs it drinks but little, and chews the cud at intervals. This creature is ſo very impatient of heat, that, during the ardors of ſummer, it is found only in the caverns of rocks, amidſt fragments of unmelted ice, and under the ſhades of high-ſpreading trees, or ſuch hanging precipices as face the north, and keep off the rays of the ſun. It goes to paſture in the mornings and evenings, but ſeldom quits it's retreat during the heat of the day. During the rigours of winter, it ſleeps in the thickeſt foreſts, and ſubſiſts on the ſhrubs and buds of the pine-tree. It turns up the ſnow with it's feet in queſt of herbage; and, where it perceives any vegetables, exerts it's utmoſt induſtry to uncover them. The more craggy and rugged the foreſt, the more the Shammoy ſeems to enjoy it's ſituation. It always aſcends or deſcends in an oblique direction; and will throw itſelf down a rock thirty feet high, and ſafely fix on ſome protuberance or fragment on the ſide of the precipice, though only large enough for it's feet to reſt on: in it's deſcent, however, it ſtrikes the rock three or four times with it's feet, as well to ſtop the velocity of it's motion, as to break the force of it's fall.

The ſkin of this animal, when dreſſed, has been celebrated for it's ſoftneſs and warmth: at preſent, however, the leather called Shammoy is made from the ſkins of tame Goats, ſheep, and deer.

The Shammoy is hunted, during the winter, partly for it's ſkin, and partly for it's fleſh: and it's chace is a very laborious employ; for it muſt be approached by ſurprize, and ſhot with a rifle-barrelled gun.

Altmann informs us, that there are two ſpecies of Shammoy Goats in Switzerland; one of which is redder and ſmaller than the other, and never deſcends into the vallies, but continues on the moſt inacceſſible mountains during the whole winter. The other ſpecies, which is larger and browner, ſometimes deſcends to the bottoms of the mountains; where it lives, during the winter, on the extremities of the branches of fir-trees.

Many medicinal qualities are aſcribed to ſeveral parts of this animal. The fat, mixed with milk, is ſaid to be beneficial for ulcerated lungs; and the gall is ſuppoſed to ſtrengthen the ſight, to cleanſe ulcers of the cornea, and to remove ſpots. The ſtone ſometimes found in the ſtomach of this creature, is called the German bezoar, and was formerly thought to poſſeſs the virtues of the Oriental bezoar; but even thoſe qualities which the latter was once ſaid to poſſeſs, are no longer attributed to it, being now conſidered only as a weak abſorbent.

GOAT, SEA. This fiſh has a compreſſed head, in the upper part of which the eyes are placed; the mouth is ſmall; and in each jaw there are eight teeth. Along the middle of the back are three very ſtrong large prickles united by a membrane, the foremoſt being by far the largeſt: theſe appendages the creature can raiſe or depreſs in a bony ſulcus formed by nature for that purpoſe; which peculiarity ſeems to belong to this fiſh only. It is covered with ſcales which bear ſome reſemblance to thoſe of a ſerpent; for, beſides their being arranged in ſuch a manner that the intermediate lines make a ſort of chequer-work, they alſo ſtick ſo extremely cloſe to the ſkin, that they cannot be ſeparated without a laceration of the parts. The colour of the Sea-Goat is a duſky green, ſpeckled with blue; the dorſal and ventral fins are blackiſh, marked with blue and red ſpots; the ſhape is broad, very flat, and almoſt roundiſh; and the weight is about two pounds.

This fiſh is ſometimes caught in the Mediterranean; and it's ſkin is preſerved in the cabinets of the curious.

GOAT-SUCKER. This bird, called alſo the Churn-owl, weighs about two ounces and a half; it's length is ten inches and a half, and it's breadth twenty-two. The irides are hazel-coloured; the bill is about one-third of an inch long; the tongue

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is very ſmall, and placed low in the mouth; the legs are ſmall, ſcaly, and feathered below the knees; the middle toe is connected to thoſe on each ſide by a ſmall membrane reaching to the firſt joint; and the claw of the middle toe is broad and thin. The colours are plain; but they have a beautiful effect from the elegance of their diſpoſition, conſiſting of black, brown, grey, white, and ferruginous, arranged in ſtreaks, ſpots, and bars. The male is diſtinguiſhed from the female by an oval ſpot near the end of each of the three firſt quill-feathers, and another on the two exterior feathers of the tail.

This bird is with great propriety placed among the ſwallow tribe by Klein, who calls it the ſwallow with an undivided tail. It poſſeſſes the principal characters of this genus; namely, a very large mouth, a very ſmall bill, and ſmall legs. It is alſo a bird of paſſage; and agrees with the ſwallow kind in it's food and the manner of ſeizing it; but differs from it as to the times of preying, the Goat-Sucker flying chiefly by night. It continues but a ſhort time in this iſland; appearing about the latter end of May, and diſappearing in the northern parts of Britain about the end of Auguſt; but, in the ſouthern, it ſtays above a month later. It viſits all parts of this kingdom, from Cornwall as far as the county of Roſs. Scopoli, among the moderns, ſeems to credit the report of it's ſucking the teats of goats; an error handed down from the days of Ariſtotle.

The notes of the Goat-Sucker are extremely ſingular; the loudeſt of which ſo much reſembles the ſound of a large ſpinning-wheel, that the Welſh call this bird aderyn y droell, or the wheel-bird. It begins it's ſong about the cloſe of day, ſittting uſually on a bare bough, with it's head lower than it's tail, it's lower jaw quivering with the efforts; and the noiſe is ſo violent, as to give a ſenſible vibration to any little building on which it may happen to alight, and emit this ſpecies of note. The other, and indeed the common tone, is a ſharp ſqueak, which it frequently repeats; and this ſeems to be the call of love, as the male is obſerved to reiterate it when in purſuit of the female among trees.

The Goat-Sucker depoſits it's eggs on the bare ground, uſually two in number, of an oblong form, and a whitiſh hue beautifully marbled with reddiſh brown.

Goat-Sucker, Lesser. In it's general ſhape and colour, this ſpecies exactly reſembles the preceding; but it is one-third part leſs. In Virginia, it is called Whip-Poor-Will, from it's cry, which ſeems to expreſs thoſe words very nearly. The bill is ſmall and black; the mouth is wide, it's angles extending beyond the eyes; the ſides of the head round the eyes are a light brown inclining to aſh-colour; and on the throat are ſemilunar white ſpots, the corners of which revert towards the ears. The top of the head, the upper-ſide of the neck, the back, the upper coverts of the wings, and the tail, are covered with dark brown feathers, tranſverſely barred, and ſprinkled with a lighter brown and ſome little mixture of aſh-colour blended in an irregular manner: from the bill ſome bright ſpots of orange-colour paſs over the eyes, down the ſides of the neck; and on the upper coverts of the wings are ſome pretty diſtinct ſpots of light brown. The quill-feathers are duſky, or rather black; the five firſt having a white ſpot paſſing through them, which mark appears both internally and externally. The covert-feathers within-ſide the wings are white, with a cloud of orange tranſverſely barred with duſky lines; the whole under-ſide, and covert-feathers under the tail, are white, with ſome mixture of faint orange regularly croſſed with lines of duſky black; the legs and feet are very ſmall, and feathered a little below the knees; the exterior and middle toes are joined part of the way by a membrane; and the two middle claws are ſerrated within-ſide.

This bird, firſt deſcribed by Edwards, was brought from Virginia. To illuſtrate it's hiſtory, we ſhall ſubjoin a quotation from a letter, which accompanied the bird firſt imported. 'Theſe birds come to Virginia about the middle of April; from which time till the end of June they are heard every night, beginning about duſk, and continuing till day-break; but it is chiefly in the upper or weſtern parts of the province that they are ſo frequent: I never heard more than one in the maritime parts; but near the mountains, in the month of May, within a few minutes after ſun-ſet, they begin, and make a very loud and ſhrill noiſe all night, which the echoes from the hills increaſe to ſuch a degree, that the firſt time I lodged there I could hardly ſleep; however, they are ſeldom ſeen in the day-time. The Indians imagine theſe birds are the ſouls of their anceſtors formerly ſlaughtered by the Europeans; and ſay that they never appeared in this country before that ſlaughter. Many people regard them as birds of ill omen. I have been informed, that they lay two eggs of a dark green colour, ſpotted and ſcrolled with black, in the plain beaten paths, without any ſigns of a neſt; on which they ſit very cloſe, and ſuffer a near approach before they meditate a flight.'

GOBEMOUCH; the Fly-catcher Lizard. A ſpecies of American lizard which ſubſiſts on catching flies. It is one of the ſmalleſt of the lizard kind; and is very beautiful, it's ſkin appearing as if covered with leaf-gold or ſilver; and, in ſome varieties, green, red, and gold, are elegantly intermixed.

Theſe creatures enter the houſes of the inhabitants of that country without any ſeeming apprehenſion, and only deſtroy the flies and other vermin they find there. Indeed, their whole attention is occupied in the purſuit of theſe inſects; and it is really amuſing to obſerve the various manœuvres they adopt in this favourite chace. The natives ſuffer theſe animals to run about unmoleſted; and if they perceive any flies, they will purſue them over the tables, cloaths, and even hands, of the inhabitants, without doing the leaſt injury. Notwithſtanding the beauty of theſe reptiles when alive, they are no ſooner dead, than it totally vaniſhes, and they become only of a duſky grey hue.

GOBIO CAPITATUS. An appellation given by many writers to the cottus, or cottus levis, of Linnæus, with two ſpines on it's head. This is a ſmall fiſh; and, in England, it is called the bull-head, or miller's-thumb.

GOBIONARIA. A name given by Gaza, and ſome others, to the little fiſh called cobitis, and aphua cobitis, by the ancient Greeks.

GOBIUS. A genus of fiſhes of the acanthopterygious or prickly-finned kind; the characters of which are theſe: the branchioſtege membrane contains on each ſide very diſtinct bones, extremely irregular in their ſize, the firſt and fourth being much broader than the others; the ventral fins unite,

unite, and form one ſingle fin, ſhaped like a funnel; there are two dorſal fins, the anterior of which conſiſts of ſomewhat rigid bones; the ſcales are rough; the body is oblong; the head is compreſſed; and the eyes are covered with the common ſkin of the head. In the Artedian ſyſtem, there are four ſpecies belonging to this genus.

According to Linnæus, the Gobius is a genus of the thoracic order, having the eyes placed near each other, and two ſmall holes between them, four branchioſtegious rays, and the ventral fins united. This laſt-mentioned naturaliſt enumerates eight ſpecies; the Gobius niger, paganellus, eleotris, aphya, jozo, pectiniroſtris, barbarus, and anguillaris.

GOBIUS ASPER. An appellation given by Geſner to a ſpecies of perch, called by other naturaliſts aſper piſciculus; and, by Linnæus, perca aſper. It is diſtinguiſhed among the perch tribe by Artedi under the name of the perch with eight or nine black lines on each ſide.

GOBIUS FLUVIATILIS. See GUDGEON.

GOBY, BLACK. This fiſh grows to the length of ſix inches. The body is ſoft, ſlippery, and of a ſlender form; the head is large in proportion to the ſize of the animal; the cheeks are inflated; the teeth are ſmall, and diſpoſed in two rows; and from the head to the firſt dorſal fin there is a ſmall ſulcus. The firſt dorſal fin conſiſts of ſix rays; the ſecond, of fourteen; and the pectoral fins of ſixteen or ſeventeen, cloſely united. The ventral fins coaleſce, and form a ſort of funnel, by means of which this fiſh affixes itſelf to the rocks; the tail is moderately long and rounded; the colour is brown, or deep olive, mixed with dark ſtreaks, and ſpotted with black; and the dorſal and anal fins are a pale blue, the rays being marked with minute black ſpots.

GOBY, SPOTTED. This ſpecies is caught in ſeveral parts of the Britiſh ſeas, the longeſt being only about three inches. The noſe is obtuſe; the eyes are large and prominent; the irides are ſapphirine; the head is flat; the tongue is large; and both jaws are furniſhed with teeth. The firſt dorſal fin conſiſts of ſix rays, and the ſecond of eleven; the ventral fins are united; the anal fin conſiſts of eleven rays; and the tail is even at the end. The body is of a whitiſh colour, obſcurely ſpotted with ferruginous; and the rays of the dorſal fins and the tail are barred with the ſame colour.

GODWIT; the Scolopax Œgocephala of Linnæus. This bird reſembles the woodcock in many reſpects. It is ſixteen inches in length, and twenty-ſeven in breadth; and it's weight is upwards of twelve ounces. The bill is four inches long, black at the end, and of a pale purple colour at the baſe; and from the bill to the eye there is a broad white ſtroke. The plumage of the head, neck, and back, is of a light reddiſh brown hue, marked in the middle with a duſky ſpot; the belly and the vent-feathers are white; and the tail is regularly barred with black and white. The ſix firſt quill-feathers are black; the legs, in ſome, are duſky; in others, a greyiſh blue; and the exterior toe is connected by a ſtrong ſerrated membrane to the middle toe, as far as the firſt joint. The male is diſtinguiſhed from the female by ſome black lines on the breaſt and throat, of which the latter is deſtitute.

Theſe birds are taken in the fens, in the ſame ſeaſon and manner with the ruffs and rees; and, when fattened, are eſteemed a peculiar delicacy. They appear on the Britiſh coaſts in September, in ſmall flocks; remain in the iſland during the winter; and, like curlews, walk on the open ſands, and feed on inſects.

GODWIT, CINEREOUS. This ſpecies was firſt diſcovered near Spalding, in Lincolnſhire. The bill is two inches and a half long; the head, neck, and back, are variegated with aſh-colour and white; the tail is ſlightly barred with cinereous; the throat and breaſt are white, except that the latter is marked with a few aſh-coloured ſpots; and the legs are long, ſlender, and aſh-coloured. This bird is much of a ſize with the green-ſhank, and approaches it nearly in colour; but the thickneſs of it's bill forms a ſpecific diſtinction.

GODWIT, RED. This bird is ſeldom ſeen in England, but it ſometimes frequents the northern provinces. It is ſuperior in ſize to the common kind: the bill is nearly four inches long, a little reflected upwards; the lower half being black, and the upper yellow. The head, neck, breaſt, ſides, ſcapulars, and upper part of the back, are of a bright ferruginous colour; the head is marked with oblong duſky lines; the neck is plain; the breaſt, ſides, ſcapulars, and back, are varied with tranſverſe black bars, and the edges of the feathers with a pale cinereous brown. The middle of the belly is white; the leſſer coverts of the wings are brown, the greater being tipped with white; the ſhafts, and the lower interior webs of the greater quill-feathers, are white; the exterior webs, and the upper half of the ſecondary feathers, are black, the lower half being white; the coverts, and the inferior part of the tail-feathers, are white, the upper part being black; the legs, which are alſo black, are four inches long; and the thighs above the knees are naked for the ſpace of one inch and three-quarters.

GODWIT, LESSER. This ſpecies weighs about nine ounces; it's length is ſeventeen inches, and it's breadth twenty-eight. The bill bends a little upwards, and is more than three inches long; the chin is white, tinged with red; the neck is cinereous; the head is of a deep aſh-colour; the back is uniformly brown; and the rump is encompaſſed with a white ring. The two middle feathers of the tail are black; the outermoſt, eſpecially on the exterior web, are white almoſt to their tips; and, in the reſt, the white part becomes leſs and leſs towards the centre. This bird was firſt deſcribed by Ray.

GODWIT, AMERICAN, GREAT. The bill of this ſpecies is about four inches long, ſtraight and ſlender, and of a bright yellow colour near the baſe, growing gradually duſky towards the point; the noſtrils are placed pretty near the head, but the eyes are more remote from the head than is uſual in other birds; the head, and the upper part of the body, are marked with black and dark brown ſpots, except that the rump is brighter; the quills of the wings next the great ones are of an orange colour marked with ſmall black ſpots; the belly and thighs are a browniſh white; the thighs are naked far above the knees; and the feet and legs are covered with duſky ſcales. This bird is a native of Hudſon's Bay.

GODWIT, RED-BREASTED. The bill of this ſpecies, which meaſures upwards of three inches, is long and ſtraight, black at the point, and yellowiſh towards the baſe; on each ſide of the eye paſſes a whitiſh line, which riſes from the bill; the top of the head, the neck, and the back, are covered

1. CINEREOUS GODWIT. 2. GREAT AMERICAN GODWIT. 3. RED GODWIT. 4 RED-BREASTED GODWIT. 5. GOIAVER. 6. GREEN GOLDFINCH 7. RED-HEADED GREENFINCH.

Plate XLVII.

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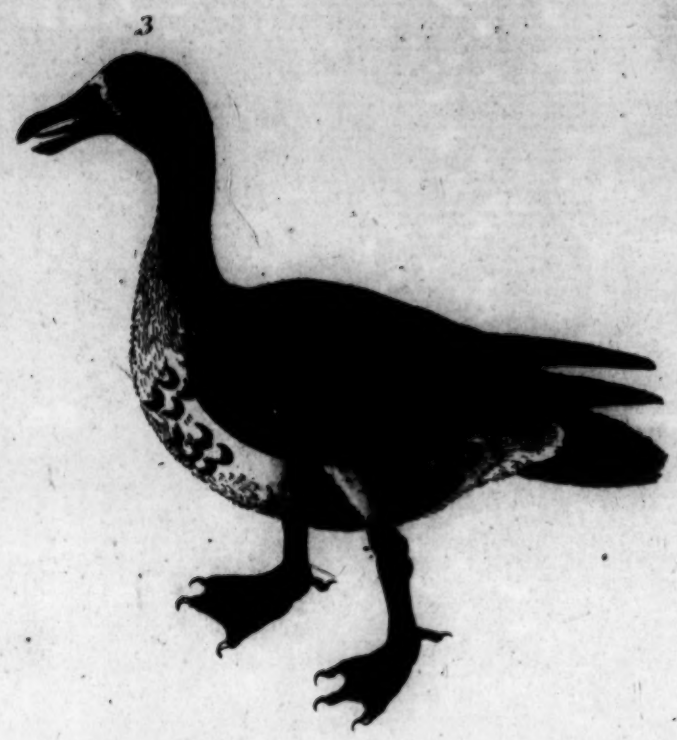

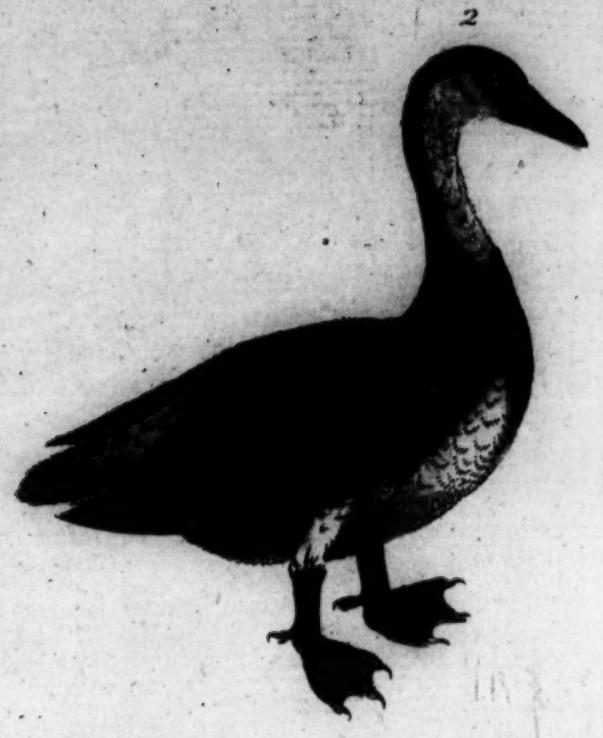

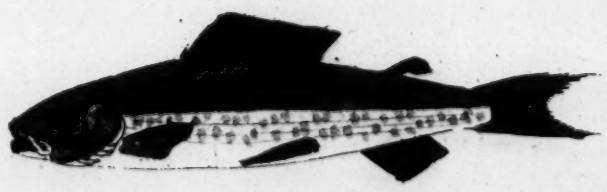

1. GOLDFINCH. 2. BLUE-WINGED GOOSE. 3. WHITE-FRONTED GOOSE. 4. GOWRY-BIRD.
5. GRAYLING. 6. EARED GREBE. 7. INDIAN GREEN FINCH.

Plate XLVIII.

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vered with dark brown feathers, variegated with black duſky lines; the rump is white; the tail is of a blackiſh brown colour; the primaries are a dark cinereous with white ſhafts; the quills towards the back are a reddiſh brown and black, interchangeably pectinated into each other on their webs; the covert-feathers immediately above the quills are brown with white tips; the leſſer coverts are a light brown; and the interior are a dark aſh, or blackiſh. The lower part of the neck, the breaſt, and the belly, are of a reddiſh orange-colour, with ſmall tranſverſe lines of black; the legs are bare of feathers above the knees; and the exterior and middle toes are partially connected by a membrane. This bird has a general reſemblance to the red Godwit, which occaſionally viſits the Britiſh coaſts. It is a native of the northern parts of America.

Godwit, White. This elegant ſpecies is wholly white, except the tail, the primaries, and the ſmall feathers on the ridge of each wing, which have a dirty tinge. The bill turns up towards the point; and in this reſpect gives the bird the appearance of the avoſetta kind.

GOGET. An appellation frequently given to the gobius niger of Linnæus, the ſea-gudgeon, or rock-fiſh. See Goby, Black.

GOIAVIER. A bird of the fly-catcher kind, ſo called by the natives of Manilla. The top of the head is black; from the ſuperior angle of the bill riſes a white tranſverſe line, which paſſes above the eye, and extends to the hind-part of the head; and below this white line there is another of a black colour, which paſſes through the eye to the baſe of the lower mandible. The upper part of the body, and the tail, are of a browniſh earth-colour; the primaries of the wings and the tail are ſomewhat darker, and ſprinkled with black; the throat, the breaſt, the belly, and the ſides, are a dirty white; the under-ſide of the tail is a bright yellow, of which colour alſo are the irides; and the feet and bill are black.

This bird, which was firſt deſcribed by Sonnerat, frequents the vicinities of houſes, ſeems remarkably familiar, and lives on fruits and inſects.

GOLD EYE, or GOLDEN EYE. An appellation given by naturaliſts to a ſpecies of duck. See Duck.

GOLD-FINCH; the Fringilla Carduelis of Linnæus. The Gold-Finch, which is the moſt beautiful of our hard-billed birds, weighs about half an ounce; it's length, from the tip of the bill to the end of the tail, is five inches and a half; and the greateſt expanſion of it's wings is nine inches. The bill is white tipped with black, the baſe being ſurrounded with a ring of rich ſcarlet feathers; a black line extends from the angles of the mouth to the eyes; the cheeks are white; from the top of the head a broad black line paſſes on each ſide almoſt to the neck; the hind-part of the head is white; the back, rump, and breaſt, are of a fine pale tawny brown colour; the belly is white; the wings and tail are black, but the points of the primaries in both are white; a beautiful yellow ſtripe runs acroſs the wings; the tail is about two inches long; and the legs are white.

The male is diſtinguiſhed from the female by the feathers on the ridges of the wings, which are of a deep black colour; while thoſe of the hen are a duſky brown; and the black and yellow in the wings of the latter are leſs brilliant than in thoſe of the male. The young bird, before it molts, has a grey head, and is hence called the Grey-pate by bird-catchers.

The Gold-Finch begins to conſtruct it's neſt in April, when the generality of fruit-trees are in bloſſom. As it excels other ſmall birds in the beauty of it's feathers, ſo likewiſe in ingenuity. It's neſt is ſmall, but extremely beautiful: the outſide conſiſts of very fine moſs curiouſly interwoven with other materials; and the inſide is lined with fine down, having the appearance of cotton. This bird lays five or ſix white eggs, marked with deep purple ſpots on their upper ends. It is naturally fond of orchards; and frequently builds it's neſt in the apple or pear-tree.

Gold-Finches being mild and gentle to a very high degree, are more eaſily tamed than almoſt any other birds. They are ſoon reconciled to their impriſonment in cages; where, after they have remained a conſiderable time, they become ſo much attached to them, that if their doors be opened, they will not fly away. In ſome parts of England they are called Draw-waters, from the facility with which they learn to draw their water when inclined to drink; for which purpoſe they are ſometimes furniſhed with little ivory buckets faſtened to ſmall chains. It is very amuſing to obſerve with what dexterity theſe little creatures pull up their little veſſels, drink, and return them. They are much delighted with viewing themſelves in looking-glaſſes, which are ſometimes fixed by their owners to the backs of their bucket-boards; and they will frequently ſit on their perches, pluming and dreſſing themſelves with the greateſt care imaginable, looking inceſſantly in their glaſſes, to ſee that every feather is placed in the moſt exact order.

The Gold-Finch is a long-lived bird, frequently reaching the age of twenty years; and Willughby mentions one which lived twenty-three. The young are tender, and therefore ſhould not be removed from their neſts till they are pretty well feathered. If a young Gold-Finch is brought up under a Canary-bird, a wood-lark, or any other ſinging-bird, it will readily catch their ſong. A cock Gold-Finch, bred from the neſt, will couple with a hen Canary-bird, and their eggs will produce birds between both kinds, particularly of the ſong and colours of both; but this progeny will be barren. Towards winter, theſe birds aſſemble in flocks, and feed on ſeeds of different kinds, eſpecially thoſe of the thiſtle.

Gold-Finch, Green. This bird was in the aviary of the late Prince of Wales, but from what country it came is uncertain. It is about five inches long; the bill is of a light yellow colour, thick at the baſe, ſharp at the point, and ſlightly incurvated downwards. The fore-part of the head round the bill, as far as the eyes, is a fine ſcarlet; the top of the head, and the hinder part of the neck, are aſh-coloured; and the back, rump, and wings, are a yellowiſh green. The tail, when ſpread, is partly of a duſky hue; but, when cloſed, it appears red, the feathers having claret-coloured edges. The upper part of the breaſt is of a light yellow green hue, which gradually becomes white on the breaſt and belly, variegated with tranſverſe duſky lines; and the legs and feet are fleſh-coloured.

Gold-Finch, American. The bill of this bird nearly reſembles that of the common Gold-Finch both in ſhape and colour: the eyes are of a dark hazel-colour; the forehead is covered with

black feathers; the reſt of the head, the neck, breaſt, and back, are inveſted with bright yellow feathers; the thighs, the lower belly, and covert-feathers both above and beneath the tail, are a yellowiſh white; the leſſer covert-feathers of the wings are yellow without, and whitiſh within; the reſt of the wing-feathers are black; the tail is compoſed of twelve feathers of a blackiſh hue; and the legs and feet are reddiſh. The hen differs principally from the cock in having leſs beautiful and vivid ſhades of the ſame colours.

This bird was brought from New York. Edwards kept one of them for ſeveral years; and obſerved that it molted twice annually; namely, in the months of March and September.

GOLD FISH; the Cyprinus Auratus of Linnæus. Gold Fiſhes, though natives of China, are quite naturalized in this kingdom, and breed as freely in open waters as the carp. They were firſt introduced into England about the year 1691; but were not generally known till 1728, when great numbers were imported, and circulated round the vicinity of London; from whence they have been diſtributed to the remoteſt parts of the country.

The Gold Fiſh, with reſpect to the figure of it's body, bears a ſtrong reſemblance to the carp. It ſometimes grows to the length of eight inches in this kingdom; but in it's native country it arrives at the ſize of the herring. The noſtrils are tubular, and form a kind of appendages. The dorſal fin and the tail vary greatly in ſhape; the latter is naturally bifid; but in many it is obſerved to be trifid, and in ſome quadrifid. The anal fins form the moſt diſtinguiſhing characters of this ſpecies, being placed oppoſite each other, like the ventral fins; whereas, in other fiſhes, they are arranged behind each other.

The colours of Gold Fiſhes are liable to the greateſt variations: ſome are marked with a fine blue, brown, or bright ſilver; but the general predominant colour is that of gold of a moſt brilliant appearance. However, it is by no means neceſſary to be very particular in the deſcription of animals which are ſo eaſily examined; and indeed prints only can convey an adequate idea of theſe beautiful, but varying fiſhes, to thoſe who have not an opportunity of ſurveying them in an animated ſtate.

The moſt admired kinds of Gold Fiſhes are caught in a ſmall lake in the province of Che-Kyang. In that country, every perſon of faſhion keeps them for his amuſement, either in porcelain veſſels, or in ſuch ſmall baſons as decorate the courts of the houſes in China. The extreme beauty of their colours, and their lively motions, afford great entertainment; eſpecially to the ladies, whoſe pleaſures, by reaſon of the narrow policy of that country, are very ſolitary and confined.

GOLD FISH is alſo an appellation given by ſome authors to the alauſa, or ſhad, from the yellow colouring which frequently adorns it's gills.

GOLD SINNY. This fiſh, which is caught on the Corniſh coaſts, in the whole form of it's body, lips, teeth, and fins, bears a ſtriking reſemblance to the wraſſe. It never exceeds a palm in length. Near the tail there is a remarkable black ſpot; and the firſt rays of the dorſal fin are tinged with black. The dorſal fin conſiſts of ſixteen ſpiny and nine ſoft rays, the pectoral of fourteen, the anal of three ſpiny and eleven ſoft, and the ventral of ſix; and the tail is almoſt even at it's extremity.

GOLDEN EYE. A ſpecies of fly, called alſo Chryſops and the Stinking Fly. It is a very beautiful inſect, about three-quarters of an inch long; the body is ſlender, and of a greeniſh yellow colour; the wings are large and tranſparent; and the eyes, which are large, exhibit the appearance of gold. This animal is produced from a worm that feeds on the plant lice; and, when cruſhed, it emits an intolerable ſtench, from which circumſtance it receives one of it's common names.

GOMATUS. An appellation given by many of the ancient writers to the gurnard, more frequently called gurnardus.

GONAMBUSCH. A name whereby ſome authors expreſs the humming-bird, the ſmalleſt of all the feathered tribe.

GONDOLA SHELL. An appellation ſometimes given to a peculiar ſpecies of ſhell of the concha globoſa kind. It is of the genus of dolium, and comprehends ſeven ſpecies.

GONGRUS. A name given by Ælian, Appian, and ſome others of the Greek writers, to the conger, or ſea-eel.

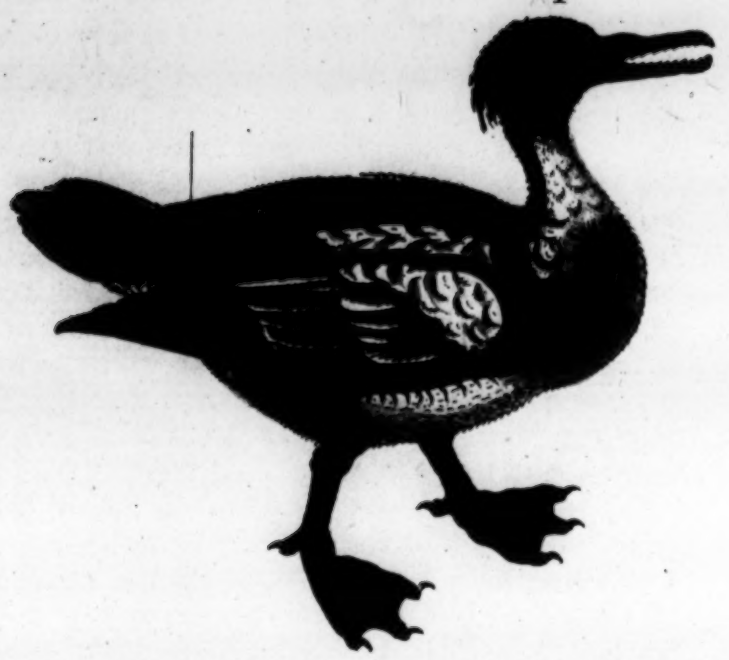
GONINON. A French appellation for the common gudgeon.

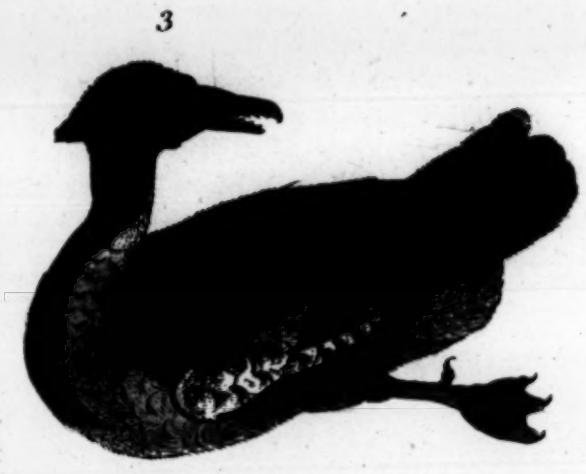
GONORYNCHUS. A ſpecies of cyprinus, having eight rays in the anal fin, a cylindric body, and a bifid tail. It is caught in the ſeas bordering on the Cape of Good Hope.

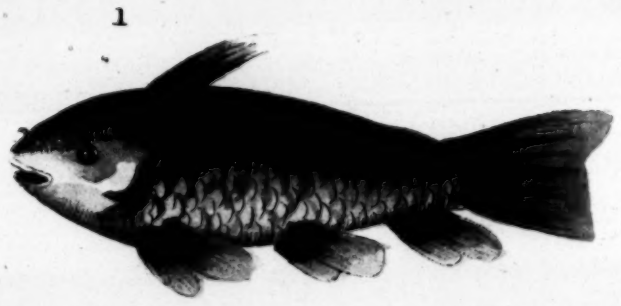
GOOSANDER. This bird frequents the rivers and lakes of Great Britain, particularly in ſevere winters; but it's native regions ſeem to lie in higher northern latitudes. It dives with great dexterity, and ſubſiſts almoſt entirely on fiſh. The length of the male is about two feet four inches, the breadth about three feet two inches, and the weight four pounds. The bill is three inches long, narrow, and finely ſerrated; and both that and the irides are red. The head is large; and the feathers on it's hind-part are long and looſe. The colour is black, beautifully gloſſed with green. The upper part of the neck is of the ſame colour with the head; the lower part, and the belly, are a fine pale yellow; the upper part of the back, and the lower ſcapulars, are black; the lower part of the back, and the tail, are aſh-coloured, the latter conſiſting of eighteen feathers. The primaries are black; the ſecondaries are white, ſome of them being edged with black; the coverts, at the inſertion of the wing, are black, the reſt being white; and the legs are of a deep orange-colour.

The female, which is frequently called the dun-diver, and has generally been eſteemed a different ſpecies, is leſs than the male: the head and the upper part of the neck are of an iron colour; the throat is white; and the feathers on the hind-part of the head form a pendent creſt. The back, the coverts of the wings, and the tail, are of a deep aſh-colour; the greater quill-feathers are black, the leſſer being white; and the breaſt and belly are white tinged with yellow.

GOOSANDER, RED-BREASTED. This ſpecies which breeds in Scotland and the Hebrides, weighs about two pounds; the length is one foot nine inches, and the breadth two feet ſeven inches. The bill is three inches long; the lower mandible is red, and the upper duſky; the irides are a purpliſh red; the head and throat are a beautiful varying black and green, the former being adorned with







1. GOLD - FISH. 2. GOLDSINNY. 3. COMMON GOOSANDER. 4. RED - BREASTED GOOSANDER.

5. ANTARCTIC WHITE - WINGED GOOSE. 6. CANADA GOOSE.

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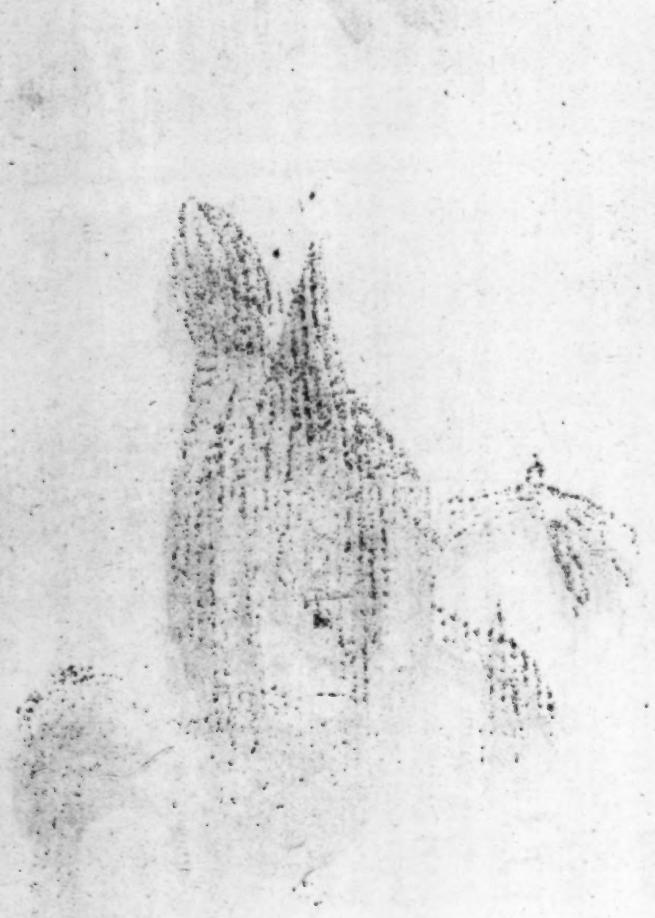


with a long pendent creſt of the ſame colour. The upper part of the neck, of the breaſt, and the whole belly, are white; the lower part of the breaſt is ferruginous, ſpotted with black; the upper part of the back is black; and near the inſertion of the wings there are ſome white feathers, edged and tipped with black. The exterior ſcapulars are black, the interior being white; the lower part of the back, the coverts of the tail, and the feathers that cover the thighs, are elegantly marked with wavy lines of black; the coverts on the ridges of the wings are duſky; the greater coverts are half black, and half white; the ſecondaries next the quill-feathers are marked in the ſame manner; and the quill-feathers are duſky. The tail is ſhort and brown; and the legs, which are ſtrong, are orange-coloured.

In the female, the upper part of the neck is of a deep ruſt-colour; the creſt is ſhort; the throat is white; the fore-part of the neck and breaſt are marbled with deep aſh-colour; the belly is white; the great quill-feathers are duſky; the ſecondaries are black, white, and duſky; and the back, ſcapulars, and tail, are aſh-coloured.

GOOSE. In the Linnæan ſyſtem, this forms a diſtinct order of birds, including the ſwan, the Gooſe, and the duck tribes; between which there is a great ſimilarity, particularly the duck and the Gooſe ſpecies, which approach ſo nearly to each other, that it may not be improper to mark the diſtinctions. The diſtinguiſhing characters of the Gooſe are theſe: it's body is bigger, it's wings are larger, it's neck is longer, it's bill is thicker at the baſe, it's legs are placed more forwards on the body, and it's rump is encircled with a white ring. By theſe marks the duck and the Gooſe kinds may be diſcriminated; and though the former may ſometimes equal the latter in ſize, there ſtill remain other ſufficient and obvious diſtinctions.

The bill is the firſt great diſtinction of the Gooſe kind from all the feathered tribe. In other birds, it is round and wedge like, or crooked at the end: in all the Gooſe kind it is flat and broad, formed for the purpoſes of ſkimming ponds and lakes of the mantling weeds which grow on their ſurfaces. The bills of other birds are compoſed of a horny ſubſtance throughout, formed for piercing or tearing: theſe birds have their inoffenſive beaks ſheathed with a ſkin which entirely covers them; and are only adapted for ſhovelling up their food, which is chiefly of the vegetable kind.

Though birds of the Gooſe kind do not reject animal food when offered them, they contentedly ſubſiſt on vegetable, and ſeldom ſeek any other. They are eaſily provided for; and, wherever there is water, they are ſure to find plenty. All the other web-footed tribes are continually voracious, and inceſſantly preying: but theſe lead more innocent lives; the weeds on the ſurfaces of waters, or the inſects at their bottoms; the graſs by the banks, or the fruits and corn in cultivated grounds; are ſufficient to ſatisfy their gentle appetites.

As their food is chiefly of the vegetable kind, ſo their fecundity is in proportion. Predaceous animals, whether birds or quadrupeds, are generally unfruitful. Nature, which has ſupplied them with powers of deſtruction, has denied them fertility. But the caſe is far otherwiſe with reſpect to thoſe harmleſs animals now under conſideration: they ſeem formed to fill up the chaſms in animated nature cauſed by the voraciouſneſs of others; they breed in great abundance, and lead their young to the pools as ſoon as they are excluded from their eggs.

The fleſh of this tribe is nouriſhing and wholeſome. The ſwan was regarded as a great delicacy among the ancients; but the Gooſe was abſtained from, as totally unfit for food. Modern manners have inverted taſtes: the Gooſe is now become the favourite; and the ſwan is ſeldom brought to table, unleſs for the purpoſe of oſtentation. At all times, however, the fleſh of the duck has been in high eſteem; the ancients even regarded it more highly than the moderns: we are contented to eat it as a delicacy; the ancients conſidered it as medicinal; and Plutarch aſſures us, that Cato kept his whole family in health by feeding them with duck whenever they happened to have ſymptoms of indiſpoſition.

The valuable qualities of great fecundity, eaſy ſuſtenance, and ſalubrious nouriſhment, have operated on man to take theſe fowls from a ſtate of nature, and render them domeſtic. How long they have been reclaimed from their original independence, is not eaſily aſcertained; for, from the earlieſt accounts, they have held their preſent rank. The time indeed muſt have been very remote; ſo many changes have been wrought in their colours, their figures, and even their internal formations, by human cultivation.

The different kinds of theſe birds, in a wild ſtate, are ſimple in their colourings. When a faithful deſcription of the plumage of a wild Gooſe, or wild duck, is given, it will to a feather correſpond with that of any other; but, in the tame kinds, no two of any ſpecies are exactly alike: different in ſize, colour, and frequently in form, they appear to be the mere creatures of art; and, having been ſo long dependent on man for ſupport, they ſeem to aſſume forms ſuited to his pleaſures or neceſſities.

Gooſe, Wild. The Gooſe, in it's wild ſtate, always retains the ſame marks: the whole upper part is aſh-coloured; the breaſt and belly are of a dirty white; the quill-feathers and the tail are duſky, the latter being edged with white; the bill is narrow, black at the baſe and tip, and red in the middle; the legs are of a ſaffron colour; and the claws are black.

Wild Geeſe are ſuppoſed to breed in the more retired parts of the north of Europe; and, at the approach of winter, to deſcend into more temperate regions. Theſe birds are often ſeen, in flocks of fifty or a hundred, flying at very great heights, and preſerving great regularity in their motions; ſometimes forming a ſtraight line; and, at others, aſſuming the ſhape of a wedge, which is ſuppoſed to facilitate their progreſs. Their cry is frequently heard when they are at an imperceptible diſtance above us; and it is probable that this is a note of mutual encouragement, as they ſeem to exert it when they alight during thoſe journies. When on the ground, they range themſelves in a line, after the manner of cranes; and ſeem to have deſcended rather for the ſake of reſt than for any other refreſhment. Having continued in this ſituation for an hour or two, one of them has been heard to ſound a kind of charge, by means of a loud note, which has been punctually attended to by the others; and the whole flock has immediately purſued their journey with renewed alacrity.

The Wild Gooſe, and many other varieties, agree in one common character of feeding on vegetables,

getables, and of being remarkable for their fecundity. But the tame Gooſe is the moſt fruitful of the kind: having fewer enemies, it leads a ſafer and more plentiful life; it's prolific powers increaſe in proportion to it's eaſe; and it is frequently known to lay upwards of twenty eggs; but the Wild Gooſe ſeldom lays more than eight.

Goose, Tame. The Tame Gooſe, like other domeſtic animals, varies extremely in it's colours. It ſeems to derive it's origin from the grey-lag, the only ſpecies which the Britons could take young and familiarize. The tame female is very aſſiduous in hatching her eggs; during which time ſhe receives two or three viſits every day from the gander, who ſometimes drives her from the neſt, and takes her place with great ſtate and compoſure. When the young are excluded, the pride of the gander is inconceivable: conſidering himſelf as a champion to defend his young, and to keep off even the ſuſpicion of danger, he purſues dogs, and even men, that never mean to moleſt him; and, when he has attempted to attack a maſtiff, or any other animal, to whoſe contempt alone he is indebted for his ſafety, he returns in triumph to his female and her brood, ſcreaming and clapping his wings, as if conſcious of victory.

The fleſh of the young Gooſe is certainly very agreeable food. But the value of this bird is greatly increaſed by it's feathers: not to mention the quills, ſo eſſentially neceſſary for all ranks, and in almoſt every ſituation, the feathers are highly valuable in another capacity, as the warmeſt and ſofteſt beds are formed of them.

Vaſt quantities of Tame Geeſe are kept in the fens of Lincolnſhire, which are plucked, for the ſake of their feathers, ſeveral times in a year. Theſe feathers are a conſiderable article of commerce; but thoſe of Somerſetſhire are moſt valued by the trade; as thoſe of Ireland are reckoned the worſt.

In Lincolnſhire, an individual will ſometimes poſſeſs a thouſand old Geeſe, each of which will rear ſeven; ſo that, towards the end of the ſeaſon, he will become maſter of eight thouſand. During the breeding ſeaſon, theſe birds are lodged in the ſame houſes with the inhabitants, and even in their bed-chambers: in every apartment there are three rows of coarſe wicker-pens, placed one above another; and each bird has it's ſeparate lodge, of which it keeps poſſeſſion during the ſeaſon of incubation. A perſon, called a Gooſe-herd, attends the flock, and twice a day drives the whole to water; after which he conducts them back to their habitations, aſſiſting thoſe that live in the upper ſtories to aſcend their neſts, and taking care never to miſplace a ſingle bird.

Theſe Geeſe are generally plucked five times during the year: the firſt plucking commences at Lady-day, for feathers and quills; and the ſame is renewed, for feathers only, four times more between that term and Michaelmas. The old Geeſe quietly ſubmit to the operation, but the young ones are very noiſy and reſtleſs. If the ſeaſon proves cold, numbers of them die by this barbarous cuſtom; particularly the young, which, though hardly two months old, undergo the ſame proceſs.

Vaſt numbers of Geeſe are annually driven to London, for ſupplying the markets; among which are all the ſuperannuated Geeſe and ganders, whoſe fleſh proves unuſually tough and dry.

Geeſe are very profitable to the peaſant on account of their fleſh, greaſe, and feathers. They live on commons where no other animals could procure ſubſiſtence; and in general require very little attendance, provided they have acceſs to plenty of water. They lay from twelve to ſixteen eggs, and ſit about thirty days; but, when the weather proves favourable, they hatch in about twenty-ſix days. After the goſlings are excluded, ſome people keep them in their houſes ten or twelve days, feeding them with curds, barley-meal, and bran; and, when they have acquired ſome ſtrength, permit them to go abroad four or five hours in the day, and then take them in again, till they are large enough to defend themſelves from vermin. Others put the young brood out at firſt, and perhaps with equal ſucceſs.

Goose, Grey Lag. This is the largeſt ſpecies found in Britain. It weighs ten pounds; it's length is two feet nine inches; and the expanſion of it's wings is five feet. The bill is large and elevated, and of a fleſh-colour tinged with yellow; the head and neck are cinereous mixed with a light yellow; and the hind-part of the neck is a very pale yellow. The breaſt and belly are whitiſh, clouded with grey; the back is grey; the leſſer coverts of the wings are almoſt white, the middle row being a deep cinereous; the primaries are grey, tipped with black and edged with white; the ſecondaries are entirely black; and the ſcapulars are of a deep aſh-colour edged with white. The coverts of the tail and the vent-feathers are a pure white; the middle feathers of the tail are duſky tipped with white; the exterior feathers are almoſt wholly white; and the legs are of a fleſh-colour.

This ſpecies reſides conſtantly in the fens, where it breeds, and produces eight or nine young, which are eaſily tamed, and eſteemed moſt excellent food. The old Geeſe which are ſhot are frequently plucked, and ſold for tame ones; but their fleſh is coarſe and tough. Towards winter, they collect in great flocks; but they never migrate into any other country. Indeed, this ſpecies ſeems to be the origin of the domeſtic Gooſe; and is the only one which appears capable of being domeſticated.

Goose, Bean; the Anas Anſer Manſuetus Ferus of Linnæus. This bird is about two feet ſeven inches in length; the extent of it's wings is nearly five feet; and it's weight is upwards of ſix pounds. The bill is much compreſſed near the end, of a pale colour in the middle, and black at the baſe and nail: the nail bears ſome reſemblance to a horſe-bean, and hence this ſpecies receives it's name. The head and neck are of a cinereous brown hue tinged with ferruginous; the breaſt and belly are a dirty white, clouded with cinereous; the ſides and ſcapulars are a dark aſh edged with white; the back is of a plain aſh-colour; the coverts of the tail are white; the leſſer coverts of the wings are a light grey, the middle being deeper, tipt with white; the primaries and ſecondaries are grey tipt with black; the feet and legs are ſaffron-coloured; and the claws are black.

The Bean Gooſe arrives in Lincolnſhire in autumn, and diſappears again in May. It never breeds in this country; but retreats to the ſequeſtered wilds in the north of Europe.

Goose, White-Fronted; the Anas Erythropus of Linnæus. This bird is frequently ſeen, during winter, in the marſhes of Cheſhire, and in all the northern world as far as Hudſon's Bay.

It

It diſappears in this kingdom very early in the ſpring, none being ever ſeen after the middle of March.

The weight of this ſpecies is about five pounds and a half, the length two feet four inches, and the extent four feet ſix inches. The bill, which is elevated, is of a pale yellow colour with a white nail; the forehead is white; the head and neck are a cinereous brown, tinged with ferruginous; the coverts of the wings, and the primaries and ſecondaries, are ſomewhat darker than the head and neck; the tail is principally aſh-coloured; the breaſt and belly are a dirty white marked with great ſpots of black; the legs are yellow; and the claws are whitiſh.

Goose, Canada. This ſpecies is ſhaped nearly like the common tame Gooſe, but is ſomewhat longer: the bill is of a black, or deep lead-colour; the eyes are dark; the head and neck are black, except a white mark on the under-ſide of the former, which becomes narrower on the ſides, and terminates in points about the place of the ears; the back, wings, and part of the breaſt and belly, are of a dark brown hue, the edges of the feathers inclining to aſh-colour; and the primaries are almoſt black. The lower part of the back and rump is black; the upper coverts of the tail are white; and the tail-feathers are black. The fore-part of the breaſt, the lower belly, and the covert-feathers beneath the tail, are white; and the legs and feet are of a dark lead-colour.

Goose, Blue-Winged. This bird is ſmaller than the common tame Gooſe: the bill is two inches long, and of a red colour; the head, and the greateſt part of the neck, are white; the back, the breaſt, and the lower part of the neck, are a dark brown; the tail is of a browniſh aſh-colour; and the belly and thighs are white. The legs are bare of feathers juſt above the knees; the three foreward toes are webbed; the legs and feet are red; and the toes are black. This ſpecies is a native of Hudſon's Bay: it continues in that country during the breeding ſeaſon; but, when the ſeverity of winter renders it's ſubſiſtence precarious, it retires to more ſoutherly climes.

Goose, Muscovy. This ſpecies is three feet long from the tip of the bill to the end of the tail; the expanſion of the wings is nearly five feet; and the weight is about fourteen pounds. The bill is orange-coloured, with a large tubercle of the ſame colour on the baſe of the upper jaw; the pupil of the eye is black; the irides are of a golden hue; and beneath the bill hangs a large bag. The top of the head, and the ſides of the neck, are of a dark brown hue; and the upper part of the back is of the ſame colour, except that the exterior edges of the feathers are ſomewhat lighter. The wings, and the reſt of the body, are white, except a few dark feathers on the upper part of the tail; the legs and feet are of a fine orange-colour; and the claws are black. The female differs from the male only in having a ſmaller tubercle on the upper mandible.

Goose, Gambo, or Spur-Winged. This fowl bears a ſtrong reſemblance to the Muſcovy duck. The bill is long and reddiſh; the head and belly are principally white; and the back is of a ſhining dark purple colour. On the head there is a red carbuncle or wart; but the moſt diſtinguiſhing mark is a ſtrong ſpur on the firſt joint of the wings.

Goose, Antarctic, White-Winged. This ſpecies, which is a native of the Falkland Iſles, is three feet four inches long; the bill is ſmall and duſky; the head, the neck, and the whole under-ſide of the body, are of a ſnowy whiteneſs; but the upper part of the back is barred with black and white. The coverts of the wings are white; the ſecondaries are croſſed with a broad duſky bar, and another of white with a green ſpeculum; the primaries are duſky; the middle feathers of the tail are white with a gloſs of green, the reſt being white; and the legs are black.

Goose, Mountain, of Spitzbergen. This variety is about the ſize of the common Gooſe: the Gander has black and white ſpotted feathers; but the plumage of the Gooſe reſembles that of the partridge.

Theſe birds are of a gregarious nature: they build their neſts in low iſlands with the feathers of their own bellies mixed with moſs; and lay five or ſix eggs of a pale green hue, ſomewhat larger than thoſe of the duck.

Goose, Mountain, of the Cape of Good Hope. This ſpecies is larger than any of the European kinds; and the plumage of the wings, and the top of the head, are of a very beautiful ſhining green colour.

The Water-Gooſe of the ſame country reſembles the common Gooſe in it's colours, except that it has a browniſh ſtripe mixed with green on the back. The fleſh of this and the preceding ſpecies is eſteemed excellent.

GOOSE, MAGELLANIC. A name given by Cluſius to a bird of the diver kind. It is a marine fowl, it grows to the ſize of the largeſt Gooſe, and is uſually very fat. The back is black; the belly is white; and the neck, which is ſhort and thick, is encircled with a ring of white feathers. The ſkin is thick and tough, like that of the hog; and it has only two coriaceous fans, inſtead of wings, hanging from it's ſides, like two arms, covered with a few feathers, partly black, and partly white. Theſe members, though they cannot afford the animal protection by flight, are nevertheleſs very beneficial in ſwimming; and indeed this bird lives wholly in the water, except during the ſeaſon of incubation.

GOOSEBERRY-WORM. An inſect frequently found among Gooſeberry-buſhes, uſually ſuppoſed to be a caterpillar, but differing eſſentially from that genus of animals, being one of the fauſſe chenilles of the French. It has a round head, and twenty-two legs; and, finally, becomes a four-winged fly. The worm is at firſt of a greeniſh colour, with ſome yellow variegations, and ſeveral black tubercles; but, on the laſt change of it's ſkin, it becomes whitiſh or cream-coloured, and loſes it's tubercles.

GOR-COCK. A bird of the gallinaceous kind, called by ſome the lagopus altera; and, by the Britiſh, the moor-cock, or red-game. It is of the ſhape of the partridge, but conſiderably larger; the beak is black and ſhort; and there is a remarkable bare ſpace over the eyes, of a fine bright red colour, ſurrounded, in the male, by a prominence of the ſame vivid colour, equally deſtitute of feathers, and fimbriated like a cock's comb. The male is alſo diſtinguiſhed from the female by black plumage at the baſe of the bill, interſperſed with frequent white ſpots, and ſome large ones near the origin of the under-chap. The male is alſo of a deeper red colour in every part; and, on the throat and breaſt, is of a fair red, without the admixture

of any other colours. The head, neck, back, and wings, are all variegated with red and black; and the breaſt and belly are of the ſame colours, except that there are ſome variegations of white on the former. The legs and feet are covered with very long and thick plumage to the very extremities of the toes; the wings are browniſh, with ſome reddiſh ſpots; and the tail is almoſt wholly black.

This bird, which generally frequents the tops of the higheſt hills, is very common in Derbyſhire, Yorkſhire, and Wales, where it feeds on mountain-berries and the tender ſhoots of the heath. It lays ſeven or eight eggs, of a mixed red and black colour, entirely covered with ſmall ſpots, except one or two minute ſpaces near the ſmaller ends. The young brood follow the hen during the whole ſummer; but, in the winter, they join in flocks of forty or fifty, when they are remarkably ſhy and wild.

The Italians call this bird and the lagopus by the common name of the francolino: and indeed Ray imagines that the lagopus of Pliny and this bird are really of the ſame ſpecies, though different in colour; but Pennant obſerves, that the account tranſmitted by Pliny ſeems too brief and indeterminate to enable us to judge what ſpecies he intended; and that the Italian francolino is not the ſame with our grous, ſeems evident from the accurate figure from the life exhibited by Edwards.

GORAIS. A name ſometimes uſed to expreſs the more common ſpecies of the caraſſiùs.

GOSHAWK; the Falco Palumbarius of Linnæus. This bird is larger than the common buzzard, and of a longer and more elegant conformation: the bill is blue towards the baſe, and black at the tip; the ſkin at the baſe of the bill is of a yellowiſh green colour; over each eye there is a long white line; and on each ſide of the neck a bed of broken white. The head, the hind part of the neck, the back, and the wings, are of a deep brown colour; the breaſt and belly are white beautifully marked with numerous tranſverſe bars of black and white; the tail is long, and of a brownish aſh-colour, marked with four or five duſky bars placed at conſiderable intervals; the legs are yellow; and the claws are blackiſh.

Willughby diſtinguiſhes this ſpecies and the ſparrow-hawk by the name of ſhort-winged hawks, becauſe their wings, when cloſed, do not reach ſo far as the end of their tails. The Goſhawk was in high eſtimation while falconry flouriſhed, and taught principally to purſue cranes, geeſe, pheaſants, and partridges. It breeds in Scotland, where it builds it's neſt in lofty trees: it is extremely deſtructive to game, darting through the woods after it's prey with vaſt impetuoſity; but if the object of it's purſuit eludes it's firſt attack, it almoſt immediately deſiſts, and perches on ſome bough till new game preſents itſelf.

GOURD-WORM. The Engliſh name of a ſpecies of Worm found in the inteſtines of ſeveral animals; and which receives it's name from it's reſemblance to the ſeed of the gourd.

GOWRY. The Engliſh appellation for the cypræa; a genus of univalve ſhells, ſuboval, and blunt at each end; having the aperture the whole length of the ſhell, longitudinal, linear, and toothed. The incloſed animal is a ſlug.

GOWRY BIRD. This bird, which appears to be a native of the Eaſt Indies, is called by Albin the Chineſe ſparrow. The bill is of a leaden colour, and reſembles that of the green-finch; the eyes are of a dark hazel-colour; the head, neck, beginning of the breaſt, back, wings, and tail, are a dark reddiſh brown; the fore-part of the neck has ſomewhat of a purpliſh caſt; the greater quills are of a deeper brown hue than the reſt of the wings; the rump is of a lighter greeniſh brown; the breaſt and the ſides of the belly are black thinly ſprinkled with ſmall round white ſpots of the ſize of a rape-ſeed; the middle of the belly, the thighs, lower belly, and covert-feathers under the tail, are light brown or dirty white; and the legs and feet are of a blueiſh, or lead-colour.

GRAINING. A fiſh of the dace kind, caught in the River Merſey near Warrington. It bears a ſtrong reſemblance to the dace, but is more ſlender, and the back is ſtraighter. It's uſual length is about ſeven inches and a half. The colour of the back is ſilvery with a blueiſh caſt; the eyes, and the ventral and anal fins, are a pale red; and the pectoral fin is a deep red.

GRALLÆ. An order of birds analogous to the bruta, in the claſs of mammalia, in the Linnæan ſyſtem; the characters of which are theſe: the beak is ſubcylindric and ſomewhat obtuſe; the tongue is entire and fleſhy; and the thighs above the knees are bare.

This order contains eighteen genera; among which are the phœnicopterus, the ardea, the ſcolopax, the tringa, &c.

GRAMPUS; the Delphinus Orca of Linnæus. This fiſh is caught from fifteen to twenty-five feet in length: it is remarkably thick; and ſo extremely voracious, that it will not even ſpare the porpus, a congenerous fiſh. It is alſo ſaid to be very inimical to the whale; and that it will hang on it, like a dog on a bull, till the animal roars through pain. The noſe is flat, and reverted at the extremity; there are thirty teeth in each jaw; thoſe before being blunt, round, and ſlender; the hinder ſharp and thick; and between each there is a ſpace adapted to receive the teeth of the oppoſite jaw when the mouth is cloſed. The ſpout-hole is in the top of the neck; and, with reſpect to the number of fins, this fiſh agrees with the dolphin. The back is black, but on each ſhoulder there is a large white ſpot; the ſides are marbled with black and white; and the belly is of a ſnowy whiteneſs.

Theſe animals ſometimes appear on the Britiſh coaſts; but are found in much greater numbers off the North Cape of Norway, whence they are alſo called the North Capers. Like the reſt of the cetaceous tribes, they ſwim againſt the wind; and are obſerved to be much diſturbed, and to tumble about with unuſual violence, on the approach of a ſtorm.

Linnæus and Artedi aſſert, that this ſpecies is furniſhed with broad ſerrated teeth; a quality which ſeems peculiar to the ſhark tribe: but Sir Robert Sibbald, who had an opportunity of examining and figuring the teeth of this fiſh, and from whom we have copied our deſcription, gives a very different account of them.

GRANIVOROUS. An epithet given to animals which feed principally on grain: ſuch are chiefly of the feathered kind.

GRASHOPPER. A ſpecies of gryllus, commonly called the cicada, though under that term the ancients expreſſed a very different animal from that which the moderns call the Graſhopper; for whereas the inſect now under conſi-

deration

deration is ſufficiently active in hopping through long graſs, the cicada did not poſſeſs this power, but either walked or flew. Their notes alſo are very different; that of the cicada being produced by a kind of buckler placed beneath the belly of the male; and that of the Graſhopper by a tranſparent membrane which covers a hole at the baſe of it's wings. There is ſtill a greater variety in all theſe with regard to ſhape and colour: ſome are green, ſome livid, and others variegated; ſome have long legs, others ſhort; ſome ſing, others are mute; ſome are perfectly harmleſs; and others are ſo extremely miſchievous, that they are regarded in ſome countries as one of the ſevereſt viſitations of incenſed Divinity.

None of this variegated tribe is better known to Britons than the little Graſhopper that breeds in great plenty in our meadows, and prolongs it's chirping note through the ſummer: the hiſtory therefore of this ſpecies will ſufficiently elucidate that of all the remainder.

This animal is green, except a line of brown which ſtreaks the back, and two pale lines under the belly and behind the legs. It may properly be divided into the head, the corſelet, and the belly. The head is oblong, prone, and ſomewhat reſembles that of the horſe; the mouth is covered by a kind of round buckler jutting over it, and armed with browniſh teeth hooked at the points; the antennæ, or feelers, are very long, tapering off to a point; and the eyes are black and prominent. The corſelet is elevated, narrow, and armed above and below with two ſerrated ſpines; the back is covered with a ſtrong buckler, to which the muſcles of the legs are firmly bound, and round theſe muſcles the veſſels of reſpiration are ſeen; the laſt pair of legs are much longer and ſtronger than the firſt two pair, and fortified by thick muſcles extremely well adapted for leaping. There are four wings; the anterior ones ſpringing from the ſecond pair of legs, the poſterior from the third pair; the hinder wings are much finer and more expanſive than the foremoſt, and are therefore the principal inſtruments of flight. The belly, which is very large, is compoſed of eight rings, and terminated by a forky tail covered with a kind of down. When examined internally, beſides the gullet, a ſmall ſtomach is perceptible; behind that, a very large one, wrinkled and furrowed within-ſide; and, ſtill lower down, a third. Thus, it ſeems not without reaſon, that creatures of this order are ſaid to chew the cud, as they ſo much reſemble ruminant animals in their internal conformation.

Soon after Graſhoppers aſſume their wings, they fill the meadows with their notes; which, like thoſe among birds, are generally conſidered as the calls of courtſhip. The male only is vocal; and, on examining the baſes of his wings, a little hole is diſcoverable in his body, covered with a fine tranſparent membrane, which is ſuppoſed by Linnæus to be the inſtrument of ſound; while other naturaliſts are of opinion, that it ariſes from the friction of the two hind legs againſt each other: however that may be, no ſooner is the note heard, than it is returned by another; and the two little animals, after a long conteſt in ſinging, are ſometimes obſerved to meet and fight deſperately. The female is generally the reward of victory: for, after the combat, the male ſeizes her behind the neck with his teeth, and thus retains her for ſeveral hours, till the buſineſs of fecundation is compleated; and on ſuch occaſions they are ſo firmly united, that it is almoſt impoſſible to ſeparate them without laceration.

Towards the latter end of autumn, the female prepares to depoſit her burden: her body is then obſerved to be greatly diſtended with eggs, ſometimes to the number of one hundred and fifty. In order to form a proper lodgment for theſe in the earth, Nature has provided her with an inſtrument at her tail, which ſhe can ſheathe and unſheathe at pleaſure: with this ſhe pierces the earth to the greateſt depth poſſible; and into the opening thereby made ſhe drops her eggs one after another. The continuation of poſterity being thus provided for by the female Graſhopper, ſhe does not long ſurvive; for, as the winter approaches, ſhe gradually withers, and dies through a total decay. Some authors aſſert, that ſhe is killed by the cold; and others, that ſhe is conſumed by worms: certain, however, it is, that neither males nor females are ever known to outlive the winter. In the mean time, the depoſited eggs continue unaltered, either by the ſeverity of the ſeaſon or the delay of ſpring: they are oval, white, and of a horny conſiſtence; their ſize nearly equals that of a grain of aniſe; and their internal ſubſtance is a whitiſh, viſcous, and tranſparent fluid. When the genial warmth of the vernal ſun begins to vivify all nature, the eggs feel his benign influence; and, generally near the beginning of May, an inſect is produced from each about the ſize of a flea: theſe are at firſt of a whitiſh colour; but, at the end of two or three days, they turn black; and, ſoon after, to a reddiſh brown. From their very origin, they exhibit the appearance of Graſhoppers without wings; and hop among the graſs, as ſoon as excluded, with ſurprizing agility.

The Graſhopper having continued above twenty days from it's excluſion without the uſe of it's wings, which are folded up in it's body, at length prepares for it's emancipation; and, in order to make the neceſſary diſpoſitions for it's approaching change, it ceaſes from it's graſſy food, and ſearches out ſome convenient place, under a thorn or thiſtle, where it may be protected from an accidental ſhower. It then exhibits the ſame laborious writhings, heavings, and palpitations, which are perceptible in all other inſects at this important revolution of their lives: it ſwells up it's head and neck; then ſeems to draw them in again; and thus for ſome time it alternately exerts it's powers to get free. At length, the ſkin which covers the head and breaſt is obſerved to divide above the neck; the head firſt iſſues out from the burſting ſkin; and the efforts of the animal ſtill continuing, the other parts follow ſucceſſively: ſo that the little inſect ſoon extricates itſelf totally from the old ſkin, which it leaves adhering to the plant under which the tranſformation was performed.

The Graſhopper, thus diſengaged from it's exterior ſkin, appears in it's perfect form; but at this period it is extremely feeble, and it's body ſo ſoft and tender, that it may be modelled like wax. It is now of a greeniſh white colour, which becomes more vivid as the moiſture on the ſurface dries up. Still, however, the inſect diſcovers no ſigns of life, but appears quite ſpent and overcome with it's exertions. During this time, the body continues drying, and the wings unfolding to their greateſt expanſion; and a curious obſerver may perceive them, fold after fold, opening to the ſun, till at laſt they become longer than the two hinder legs. The

body

body of the inſect is alſo lengthened during this operation, and becomes more beautiful than before.

Theſe inſects are generally vocal in the middle of ſummer; and, about ſun-ſet, their notes are much louder than during the heat of the day. They uniformly feed on graſs; and, if their bellies be preſſed, they will immediately return the juices of the plants on which they have laſt fed. Though averſe to the exertions of flight, and ſlow in their aerial excurſions, particularly when the weather is moiſt or cool, they are ſometimes ſeen to fly to conſiderable diſtances. If caught by one of their hinder-legs, they ſpeedily diſengage themſelves from it, leaving the member behind: this, however, does not grow again, as is uſual with crabs and ſpiders; for, being animals whoſe duration is limited to a ſingle year, they have not ſufficient time for repairing thoſe accidental misfortunes. The loſs of their legs alſo prevents them from flying. When roughly handled, they bite with great ſeverity; and, in the act of flying, make a particular noiſe with their wings.

Such are the habits and nature of thoſe little vocal inſects, which ſwarm in our meadows, and enliven the ſcene. The larger kinds differ from them only in ſize, in rapidity of flight, and their powers of injuring mankind by the devaſtations they commit on the produce of the earth. See Locust.

GRAY. A provincial appellation for the badger.

Gray is alſo uſed in ſome provinces to expreſs a ſpecies of wild duck, more commonly known by the name of the gadwall.

GRAYLING, or UMBER; the Salmo Thymallus of Linnæus. This is a very voracious fiſh, and eagerly ſeizes a bait. It ſwims with rapidity, diſappears like the tranſient paſſage of a ſhadow, and from thence has probably received the name of Umbra. It's figure is elegant; the body, which is longer and flatter than that of the trout, ſeldom exceeds eighteen inches; the head is duſky; the coverts of the gills are of a gloſſy green colour; the back and ſides are a fine ſilvery grey, whence it receives the name of Grayling; but, when the fiſh is juſt caught, they are ſlightly varied with blue and gold. The lateral line is ſtraight; the ſcales are large, their lower edges being duſky, and forming regular rows from head to tail; the top of the back fin is red, the lower part being a blueiſh purple; the ventral fins are blueiſh, ſpotted with black; and the tail is much forked. The lips are rough like a file; the tongue is ſmooth; and the gills are quadruple.

The Grayling haunts clear and rapid ſtreams, particularly thoſe flowing through mountainous countries. It is found in the rivers of Derbyſhire; in ſome of the more northern ſtreams; in the Hodder, the Dove, the Trent, the Derwent, the Wye, and the Lug. It is alſo very common in Lapland, where the inhabitants make uſe of it's entrails inſtead of runnet, to curdle the milk of the rein-deer. It's fleſh, which is firm, wholeſome, and agreeable, may be eaten at all ſeaſons of the year, but is in it's greateſt perfection in the month of December.

GREBE. In the Linnæan ſyſtem, the Grebe is a ſpecies of the colymbus, comprehending ſeveral varieties; the diſtinguiſhing characters of which are theſe: the bill is long, ſtraight, and ſharp-pointed; there is no tail; and the legs are flat, thin, and ſerrated behind with a double row of notches.

Grebe, Great-Crested; the Colymbus Criſtatus of Linnæus. This ſpecies weighs about two pounds and a half; it's length is twenty-one inches, and the expanſion of it's wings thirty. The bill, which is upwards of two inches long, is red at the baſe and black at the point; between the bill and the eyes there is a ſtripe of black naked ſkin; the irides are of a fine pale red colour; and the head is adorned with a large duſky creſt, ſeparated in the middle. The cheeks and the throat are ſurrounded with a long pendent ruff of a bright tawny colour edged with black; the chin is white; above the eye there is a white line; the hind-part of the neck, and the back, are of a ſooty hue; and the rump is covered with long ſoft down, which ſupplies the place of a tail. The covert-feathers on the ſecond and third joints of the wings and the ſecondaries are white; all the other wing-feathers are duſky; the breaſt and the belly are of a moſt beautiful ſilvery white colour, gloſſy as ſattin, and extremely elegant; the plumage under the wings is duſky, blended with tawny; the outſide of the legs, and the bottom of the feet, are duſky; and the inſides of the legs, and the toes, are a pale green.

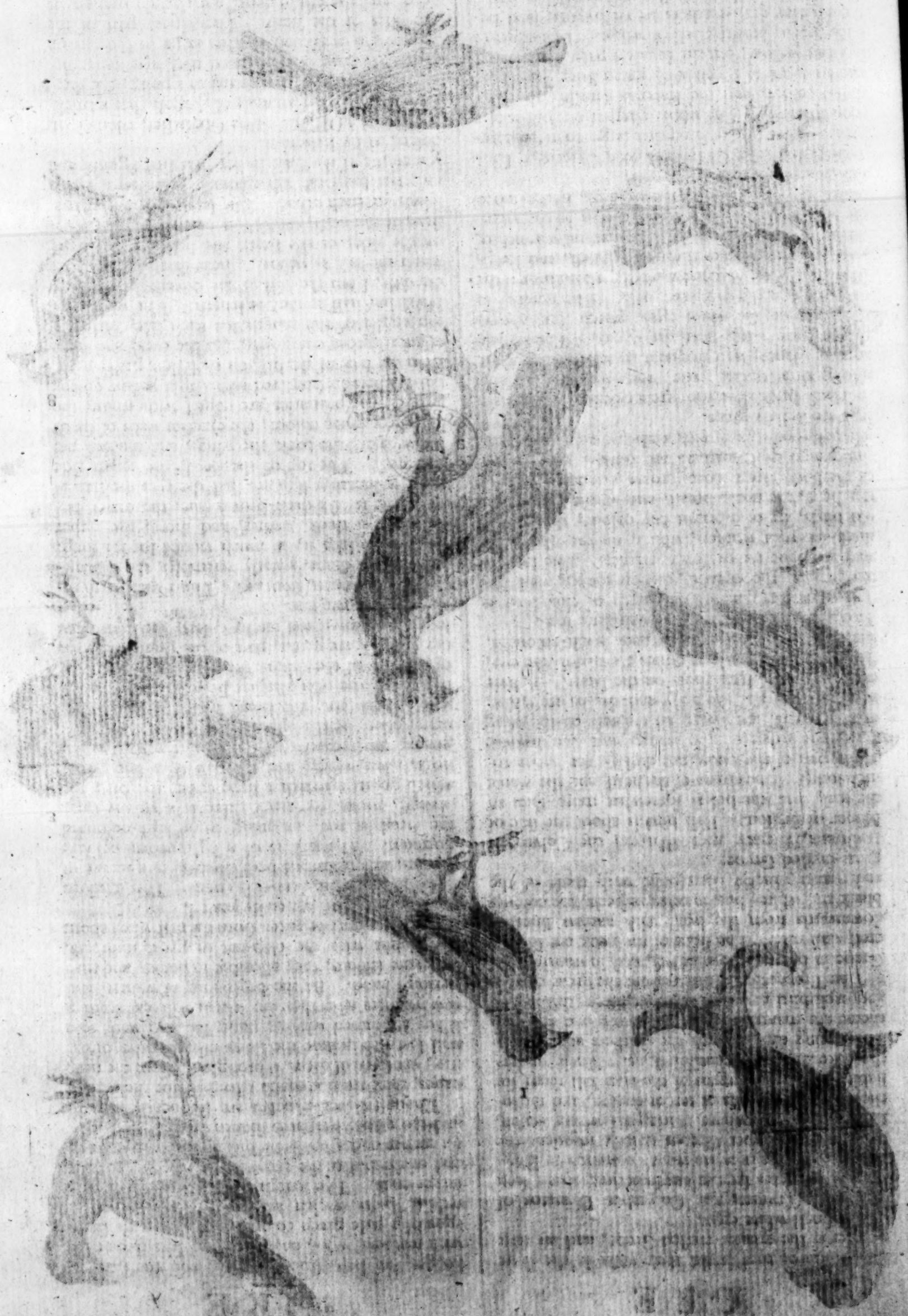
This bird, from the ſhortneſs of it's wings and feet, being ill adapted for flying or walking, ſeldom quits the water, and chiefly inhabits thoſe broad ſhallow pools where it's faculty of ſwimming can be turned to the greateſt advantage in fiſhing. It principally frequents the meres in Shropſhire and Cheſhire, where it breeds among reeds and flags, in a floating neſt kept ſteady by the weeds of the margin. The female is ſaid to nurſe her young very carefully, being obſerved to feed them moſt aſſiduouſly with ſmall eels; and, when fatigued, to carry them on her back, or under her wings.

This ſpecies preys on fiſh, and is almoſt perpetually diving. It ſhews only it's head above the water; and is very difficult to be ſhot, as it ſinks on the moſt diſtant appearance of danger. It is never ſeen on land; and, though very frequently diſturbed, it never quits the lake where, by diving and ſwimming, it is taught to expect food and ſecurity.

The Grebe is chiefly ſought after for the ſkin of it's breaſt, the plumage of which is made into tippets. But the ſkins of theſe birds are out of ſeaſon about February, when they loſe the brightneſs of their colour; and, during the time of incubation, their breaſts are entirely bare. Their fleſh is exceſſively rank; but the fat is eſteemed highly efficacious in rheumatic pains, cramps, and paralytic contractions.

Grebe, Lesser, Crested, or Eared; the Colymbus Auritus of Linnæus. This ſpecies is about a foot long, and twenty-two inches broad; the bill is black, ſlender, and ſlightly recurvated; the head and neck are black; the throat is ſpotted with white; the whole upper ſide is of a blackiſh brown colour, except the ridge of the wing above the firſt joint, and the tips of the quill-feathers, which are white; and the breaſt, belly, and inner coverts of the wings, are white. A tuft of long looſe feathers hangs backwards, on each ſide, behind the eyes; the irides are crimſon-coloured; a bare ſtripe of red extends from the bill to the eyes; and the legs are a duſky green.

Theſe birds breed in the fens near Spalding in Lincolnſhire;



1. GRENADIER. 2. COMMON GROSS-BEAK. 3. BLUE GROSS-BEAK. 4. MALACCA GROSS-BEAK. 5. PINE GROSS-BEAK. 6. BLACK GROUS. 7. LONG-TAILED GROUS. 8. PIN-TAILED GROUS. 9. WOOD GROUS.

Plate L.

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Lincolnſhire; they build their neſts in the ſame manner as the greater-creſted Grebe; and lay four or five ſmall white eggs.

Grebe, Tippet; the Colymbus Urinator of Linnæus. This ſpecies has ſometimes been ſeen in Cheſhire, but is by no means common in England. The Tippet Grebes chiefly frequent the Lake of Geneva, where, during the winter ſeaſon, they appear in flocks of ten or twelve; and the inhabitants of the margins of the lake kill them for the ſake of their beautiful ſkins. Their under-ſides, being dreſſed with the feathers adhering to them, are manufactured into muffs and tippets; and each bird is valued at about fifteen ſhillings.

The Tippet Grebe differs from the great-creſted Grebe in being ſomewhat leſs, and in wanting the creſt and ruff. The ſides of the neck are ſtriped downwards from the head with narrow lines of black and white; but, in other reſpects, the colours and marks exactly correſpond with thoſe of the great-creſted Grebe.

Grebe, Dusky and White; the Colymbus Minor of Briſſon. This bird is about the ſize of the teal; and the bill is ſomewhat more than an inch long. The crown of the head, and the whole upper part of the body, are duſky; the inner coverts, the ridge of the wing, and the middle quill-feathers, are white, all the reſt of the wing being duſky; and the belly and thighs are white, except a few black ſpots on the latter. A bare ſkin of a fine red colour unites the bill to the eye; and, in ſome birds, the whole neck is aſh-coloured. This ſpecies inhabits the Lincolnſhire fens.

Grebe, Little. The length of this bird is ten inches, the breadth ſixteen inches, and the weight about ſix or ſeven ounces. The head is thick-ſet with feathers, which, on the cheeks of old birds, are of a bright bay colour; the top of the head, the neck, breaſt, and whole upper-ſide of the body, are a deep brown tinged with red; the greater quill-feathers are duſky; the belly is aſh-coloured mixed with a ſilvery white; and the legs are a dirty green.

Theſe birds dive with great celerity, and remain a long time under water: they feed on fiſh and aquatic plants; and frequent rivers, forming their neſts in the water near the banks. The female lays five or ſix white eggs, which ſhe always covers when ſhe quits the neſt. The manner in which they are hatched is really aſtoniſhing: the water conſtantly riſes through the neſt, and keeps them perpetually wet; but the natural warmth of the bird bringing on a fermentation in the vegetables, which are at leaſt a foot thick, makes a bed ſufficiently hot for the purpoſe.

GREEN-FINCH; the Loxia Chloris of Linnæus. This bird is ſomewhat larger than the common ſparrow. The upper chap of the bill is of a duſky colour, and the lower is whitiſh; the head and back are of a yellowiſh green hue; the rump is a fine yellow; but the breaſt is paler, and ſhaded with green; and the belly is white. The edges of the exterior quill-feathers are yellow, the next being green, and the fartheſt grey; the tail is about two inches long, and ſlightly forked; the two middle feathers are duſky; and the exterior webs of the four outermoſt feathers on both ſides of the tail are yellow. The colours of the female are much leſs vivid than thoſe of the male.

The Green-Finch is one of the moſt common birds in this country. It produces it's young about the middle of May; builds it's neſt in the hedges, of hay, ſtubble, graſs, and moſs, lined with feathers, wool, and hair; and lays five or ſix eggs of a pale green colour, ſprinkled with ſmall reddiſh ſpots, which are moſt numerous at the larger ends. The length of this bird, from the end of the bill to the extremity of the tail, is about ſix inches and a half; the bill is half an inch long; and the whole weight is ſixteen drams.

Though Green-Finches are frequently kept in cages, they are not much eſteemed for their ſinging; yet ſome of them, if brought up from the neſt, will learn to imitate the ſongs of moſt other birds. They are tamed with amazing facility; and, in a few minutes after they are taken, will eat from a perſon's hand. At the beginning of winter, and in ſevere ſeaſons, they aſſemble in flocks, and may be caught with the clap-net in great numbers. The young may be taken from the neſt when about ten days old, and are eaſily reared.

Green-Finch, Red-Headed. This curious ſpecies, firſt deſcribed by Edwards, is a native of Surinam. The bill is of a light brown colour; the head is red, inclining to a high-coloured orange; round the neck there is a yellow ring, which points upwards a little under the bill; the neck, back, wings, and tail, are of a fine parrot green; the greater quills are duſky towards their extremities; on the upper part of the wing there is a yellowiſh ſpot; the breaſt and belly, as low as the thighs, are of a pleaſant light blue colour; the upper part of the thighs, the lower belly, and under the tail, are green; part of the thighs next the legs are yellow; and the legs, feet, and claws, are of a light brown hue.

Green-Finch, Indian. This Finch, with reſpect to it's ſhape, greatly reſembles the Canary-bird; and, like it, is much valued for it's ſong. The bill is thick, ſtrong, and ſhort; the upper mandible is of a dark brown hue, the lower being conſiderably lighter; and the eyes are hazel-coloured. The top of the head, the upper ſide of the neck, the back, the wings, and the tail, are of a dirty green colour; the exterior webs of ſix or ſeven of the primaries are edged with white; the tail-feathers are bordered with a light yellow green; from the baſe of the bill, on each ſide, paſſes a bar of a dull green colour through the eyes; and from the angles of the mouth, on each ſide, ſprings a black line half an inch in length. The whole under-ſide, from the bill to the covert-feathers beneath the tail, is yellow, a little ſhaded with green on the ſides of the breaſt and belly; and, on the ſides of the neck, the yellow and green loſe themſelves in each other. The legs, feet, and claws, are of a browniſh aſh-colour. This bird, which is a native of the Eaſt Indies, was firſt figured and deſcribed by Edwards.

GRENADIER. The Grenadier, which is an African bird, and a native of Angola, has a thick, ſhort, duſky bill, terminating in a point; the fore-part of the head is black; and the ſame colour ſurrounds the eyes, and reaches as far as the ears on the ſides of the head. The hinder part of the head, and the whole neck, are a bright orange, as well as the lower part of the back and rump. The middle of the back, and the upper ſides of the wings and tail, are a dirty brown inclining to black; each feather being fringed on the edge with a lighter brown, which towards the tips becomes wholly duſky. The belly, as far as the legs, is black; but the thighs, the lower belly, and the covert-feathers under the tail, are whitiſh; and

the legs, feet, and claws, are of a whitiſh fleſh-colour. This bird has a very diſagreeable note, which ſomewhat reſembles the winding up of a clock. It is a very bold animal, and will fight with great reſolution through the wires of it's cage, whence it probably receives it's name.

GRESLING. An appellation given by the Germans to the gobius fluviatilis, or common gudgeon.

GREY; the Salmo Eriox of Linnæus. This large fiſh, of the truttaceous kind, is caught in many of the Britiſh rivers. It often grows to the full ſize of the ſalmon; but differs from that ſpecies in having a broader body, and a head larger in proportion. In the jaws are four rows of teeth, and on the tongue eight ſingle teeth; the back and ſides, above the lateral line, are of a deep grey colour ſpotted with purple; the belly is ſilvery; and the tail is even. The fleſh is more delicious than that of the ſalmon, and always fetches a better price. The Grey aſcends the freſh water rivers in the month of Auguſt, but is never found in great plenty.

Pennant ſeems to conſider this fiſh as ſynonymous with the ſewin, or ſhewin, of South Wales, which is very common in the vicinity of Caermarthen. The Grey continues in the Eſk from July to September, and is then in ſpawn. When it becomes out of ſeaſon, the lower jaw is hooked. The natives of the north of England, and of South Wales, conſider this fiſh as a diſtinct ſpecies from the ſalmon.

GREY-FINCH. See FINCH.

GREY-FLY. An appellation frequently given to the gad-fly.

GREY LAG GOOSE. See GOOSE.

GREY GRUNT. This fiſh has a broad crooked back, and is about ſix inches long and four broad. The mouth is furniſhed with very ſmall teeth; the eyes are large; and the irides are white. The dorſal fin runs the whole length of the back, and is ſpiny in the middle, and ſoft at the extremity. All the fins, as well as the tail, are of a ſhining gold-colour; and the body is covered with ſilvery ſcales, mixed with a golden tinge. On each ſide are ſeven large longitudinal ſtripes of a ſhining brown; but, in ſome, of a gold-colour. This fiſh is caught near the iſland of Jamaica, and in ſeveral other parts of the Weſt Indies.

GREYHOUND. See DOG and HOUND.

GRIG. A name frequently uſed to expreſs the ſand-eel, or ammodytes. Theſe fiſhes, which are ordinarily found in the River Thames, are diſtinguiſhed from the common ſort by having larger heads, blunter noſes, thicker ſkins, and leſs fat: each fiſh ſeldom exceeds three or four pounds in weight; and they are not very highly eſteemed.

GRINETTA. An aquatic fowl of the gallinula or moor-hen kind, having open feet without any annexed membranes. This bird, the Rallus Porzana of Linnæus, is ſmaller than the moor-hen and the water-rail; the legs are of a duſky green colour; the toes are very long; the beak is compreſſed ſideways, ſhort, pointed, and covered at the origin with a deep yellow ſubſtance; the head is brown ſpotted with black; the neck is a deep olive marked with white; a broad grey bar extends from the bill beyond the eyes; the back-feathers are black next their ſhafts, then olive-coloured, and edged with white; and the ſcapulars are olive, finely marked with two ſmall white ſpots on each web.

This bird, which is common in Italy and Germany, but migratory in England, frequents the margins of ſmall ſtreams, concealing itſelf among buſhes.

GRISLAGINE. A freſh-water fiſh of the cyprinus kind, common in the rivers of Germany, having whitiſh fins, and eleven rays in the anal fin. It's ſhape ſomewhat reſembles that of the common roach; it's back is of a duſky blue colour; and it's belly and ſides below the lateral lines are of a ſilvery whiteneſs. It's ſide-lines are yellow and dotted; over which there is an interrupted blackiſh line, running into ſeveral oblong ſtreaks from the gills to the tail.

GRISOLA. A bird of the lark kind, deſcribed by Aldrovandus, and ſuppoſed by Ray to be the ſame with the ſpipoletta, or tordino, of the Venetians.

GRONDEUR. The French appellation for an American fiſh furniſhed with very remarkable teeth, which, on examination, have been found perfectly to reſemble the bufonitæ, or ſerpents-eyes; and which, in their foſſile ſtate, have for many ages been accounted gems. The arrangement of theſe teeth is ſuch, that the whole flat ſurfaces of the upper and lower jaws are in a manner paved with them. They are of different ſhapes and ſizes in diſtinct parts: thoſe placed towards the edges are of the ſmall and flat kind commonly found in Malta, and called ſerpents-eyes; towards the middle, the larger toad-ſtones, as they are called, are ſituated; the largeſt of all being arranged in two ſtraight rows or lines along the centre of each jaw. Each of theſe teeth is articulated by a gomphoſis in the jaw; and, when taken out, they have all that natural cavity which is obſerved in the hinder part of the foſſile ones. The ſockets of theſe teeth exhibit the appearance of thoſe from whence the teeth have frequently been ſhed; and it is probable that the fiſh renews them frequently during the courſe of it's life.

GROSS-BEAK; the Loxia Coccothrauſtes of Linnæus. This bird, which is alſo called the Haw-finch, is about ſeven inches in length, and thirteen in breadth; and weighs about two ounces. The bill, which is ſhaped like a funnel, is ſtrong, thick, and of a dull pale pink colour, having ſome orange-coloured feathers at it's baſe; the irides are grey; the cheeks, and the crown of the head, are a fine deep bay; a black line extends from the bill to the eyes; and the breaſt and belly are of a dirty fleſh-colour. The neck is cinereous; the back, and the coverts of the wings, are a deep brown; the coverts of the tail are a yellowiſh bay; the great quill-feathers are black, ſpotted with white on their inner webs; the tail is ſhort; and the legs are fleſh-coloured.

The greateſt peculiarity of this bird conſiſts in the ſhape of the ends of the middle quill-feathers, which, as Edwards juſtly obſerves, reſemble the figure of ſome of the ancient battle-axes: thoſe feathers, which are gloſſed over with a rich blue, are leſs conſpicuous in the female; and indeed her colours are in general leſs vivid than thoſe of the male.

The Groſs-Beak is not regularly migratory. It viſits this iſland only in ſevere winters. It feeds on berries; and even on the kernels of the hardeſt ſtones, ſuch as thoſe of cherries and almonds, which it cracks with the utmoſt eaſe; it's bill, from it's great ſtrength and thickneſs, being well adapted for this purpoſe. Willughby informs us, that

that this bird is common in Italy and Germany, where it lives in the woods during the ſummer ſeaſon; and breeds in hollow trees, laying five or ſix eggs; but that it frequents the plains in the winter.

Gross-Beak, Pine. This ſpecies frequents Hudſon's Bay, Sweden, and Scotland. It feeds on the pine-tree; and, according to Linnæus, ſings in the night-time. It is nearly twice as large as the bull-finch: the bill is ſtrong, duſky, and forked at the end; the head, back, neck, and breaſt, are of a rich crimſon colour; the bottoms of the feathers are aſh-coloured; the middle of thoſe on the head and back are black; the lower belly and the vent are aſh-coloured; the leſſer coverts of the wings are duſky, edged with orange; the next are fringed with a broad ſtripe of white; the quill-feathers and the tail are duſky, their exterior edges being a dirty white; and the legs are black. There ſeems to be a general agreement, with reſpect to colours and food, between this bird and the croſs-bill. Edwards calls it the greater bull-finch, to which he was probably led by the ſimilarity of their colouring.

Gross-Beak, Gambia. This bird is about the ſize of the haw-finch: the bill is large, and broad at the baſe, terminating in a ſharp point, and reſembling the figure of a cone; the mouth is large, and aſh-coloured internally; the pupils of the eyes are black, ſurrounded with a white iris; the head, and the greateſt part of the neck, are black, ending in a circular black point on the fore-part of the breaſt; the reſt of the body, the wings, and the tail, are a beautiful yellow ſhaded with a bright green; and the legs and feet are cinereous, with a blueiſh gloſs.

Theſe birds abound on the coaſt of Guinea, in Africa, near the River Gambia.

Gross-Beak, Purple. This ſpecies, which is about the ſize of the ſparrow, is adorned with red ſtreaks over the eyes, on the throat, and near the vent under the tail; all the reſt of the body being of a deep purple colour. The female has the ſame red ſtreaks as the male, but her body is brown. This bird is a native of the Bahama Iſlands.

Gross-Beak, Blue. This variety is about the ſize of the common Groſs-Beak, or haw-finch: the bill is ſtrong, thick at the baſe, ſharp-pointed, and of a lead-colour; the eyes are a dark hazel, with black pupils; the bill is encompaſſed with black feathers, narrow on the forehead, and reaching on the ſides as far as the eyes; the head, neck, rump, back, leſſer coverts of the wings, and all the under-ſide, are of a fine deep blue colour; on the hind-part of the head there is a ſmall creſt; the quills in the wings, and the row of covert-feathers next above them, are black; but thoſe next the back, and the ſucceeding row of coverts, have blue edges. The tail is black on the upper ſide, and ſomewhat lighter on the under; and the legs and feet are ſlender in proportion to the ſize of the bird, and entirely of a dark lead-colour. This bird is a native of Angola, in Africa.

Gross-Beak, Malacca. The Malacca Groſs-Beak has a ſtrong blue bill; the head, and the under-ſide of the wings, are of a light aſh-colour; the back, wings, rump, and tail, are of a cheſnut hue; the breaſt, belly, and the whole under-ſide, are duſky or blackiſh; and the legs and feet are fleſh-coloured.

Gross-Beak, Grey. This bird, which is a native of Jamaica, is ſomewhat leſs than the ſparrow: the bill is thick and ſhort; the head, neck, breaſt, and upper part of the belly, are of a light grey colour; the vent, and the lower part of the belly and thighs, are a fine light yellow; the wings and tail are duſky; and the legs are a light brown.

Gross-Beak, Linulated. This curious bird has a blueiſh bill; the crown of the head, the hind-part of the neck, the back, and leſſer coverts, are of a pale brown colour marked with ſemicircular lines of black; and the cheeks are a plain brown, bounded beneath with a rich crimſon line joined to another of black. The primaries and the tail are brown; the breaſt and belly are a pale brown ſlightly marked with ſemicircular lines; and the legs are fleſh-coloured.

Gross-Beak, Brown. The bill of this ſpecies is duſky; the head, neck, back, and wings, are brown, obſcurely marked with narrow duſky lines; the belly is white; the tail is duſky, or deep brown; and the legs are blueiſh.

GROUNDLING. The Engliſh appellation for a ſmall ſpecies of the cobitis, more commonly called the loach; and by Artedi denominated the ſmooth ſpotted cobitis with a cylindric body.

GROUS. A general name comprehending ſeveral ſpecies of birds claſſed by Linnæus under the genus of tetrao. Their diſtinguiſhing characters are, that they have ſhort arched bills; that their exterior and interior toes are connected to the firſt joint of the middle toe by a ſmall membrane; that their legs are feathered down to their feet; and that they have broad ſcarlet eye-brows.

Grous, Wood; the Tetrao Urogallus of Linnæus. The male of this ſpecies is two feet eight inches long, and three feet ten inches broad; and ſometimes weighs fourteen pounds. The bill is of a pale yellow colour; the noſtrils are covered with duſky feathers; the head, neck, and back, are elegantly marked with ſlender lines of grey and black running tranſverſely; the feathers on the hind-part of the head are long; and beneath the throat there is a large tuft of long feathers. The upper part of the breaſt is of a rich gloſſy green hue; the reſt of the breaſt and the belly are black, mixed with ſome white feathers; the ſides are marked like the neck; the coverts of the wings are croſſed with undulated lines of black and reddiſh brown; the exterior webs of the greater quill-feathers are black; and at the inſertion of the wings appears a white ſpot. The tail conſiſts of eighteen black feathers, marked on each ſide with a few white ſpots; the legs are covered with brown feathers; and the edges of the toes are pectinated.

The female has a duſky bill and a red throat; the head, neck, and back, are marked with tranſverſe bars of red and black; the breaſt is adorned with ſome white ſpots, the lower part being of a plain orange-colour; the belly is barred with pale orange and black; the tips of the feathers are white; the plumage of the back, and the ſcapulars, are black, the edges being mottled with black and plain reddiſh brown; the ſcapulars are tipt with white; and the tail is of a deep ruſt-colour, barred with black tipt with white, and conſiſting of ſixteen feathers. The female is conſiderably ſmaller than the male.

This diverſity between the male and female has induced ſome authors to conſider them as two different ſpecies; and Geſner calls the male the grygallus major, and the female grygallus minor.

The Grous is diſcovered in no other part of Britain

Britain but the Highlands of Scotland, where it is known by the name of the capercalze; and, in the old law-books, it is called caperkally, or the horſe of the woods. It frequents woody and mountainous countries, feeding on the tops of pine and birch-trees, and the berries of the juniper. In the ſpring, it invites the female to it's haunts with a loud and ſhrill voice; and at that ſeaſon is ſo very inattentive to it's own preſervation, as to be eaſily ſhot. It ſtands perched on a tree, and deſcends to the female on her firſt appearance. The hen lays from eight to ſixteen eggs; eight at the firſt, and more as ſhe advances in age.

The fleſh of theſe birds, which are common in Scandinavia, Germany, France, and ſeveral parts of the Alps, is generally reckoned well-taſted.

Grous, Black, the Black-game, Heath-cock, or Black-cock; the Tetrao Tetrix of Linnæus. The male has a duſky bill; the plumage of the whole body is of a black colour, gloſſed over the neck and rump with a ſhining blue; the coverts of the wings are a duſky brown, the inner coverts being white; the thighs and legs are covered with dark brown feathers, the former having ſome white ſpots; the tail, which conſiſts of ſixteen black feathers, is much forked; and the feathers under the tail are pure white.

The weight of the black-cock is about four pounds; his length one foot ten inches; and the expanſion of his wings two feet nine inches. The female weighs about two pounds; the head and neck are marked with alternate bars of dull red and black, and the breaſt with duſky black and white; the back, the coverts of the wings, and the tail, are of the ſame colour with the neck; the inner coverts of the wings are white, in both ſexes forming a white ſpot on the ſhoulder; and the tail, which conſiſts of eighteen feathers variegated with red and black, is ſlightly forked.

Like the former ſpecies, theſe birds are fond of mountainous ſituations. They feed on bilberries, and other mountain-fruits; and, in winter, on the tops of the heath. They never pair: but in the ſpring the male crows and claps his wings from ſome eminence; on which ſignal all the females within hearing reſort to him.

The hen ſeldom lays more than ſix or ſeven eggs. The young males quit her at the beginning of winter; and keep in flocks of ſeven or eight till the ſpring, during which time they inhabit the woods.

There is another variety of the Black Grous, which differs from the common ſort in being ſpotted on the neck, breaſt, wings, and thighs, with red. It ſeems to be the Tetrao Hybridus of Linnæus; and is called by Briſſon le coq de bruyere piquete, or ſpotted black-cock.

Grous, Red; the Red-game, Gor-cock, or Moor-cock. The male of this ſpecies weighs about nineteen ounces; the length is fifteen inches and a half; and the breadth is twenty-ſix. The bill is black; the irides are hazel-coloured; the throat is red; the plumage on the head and neck is a light tawny red, each feather being marked with ſeveral tranſverſe bars of black; the back and ſcapulars are a deeper red, and on the middle of each feather is a large black ſpot; the breaſt and belly are of a dull purpliſh brown colour, croſſed with numerous narrow duſky lines; the quill-feathers are duſky; the tail conſiſts of ſixteen feathers entirely black, except the four middlemoſt, which are barred with red; the thighs are a pale red, obſcurely barred with black; the legs and feet are cloathed down to the claws with thick, ſoft, white feathers; and the claws are whitiſh, very ſtrong, and broad.

The female is conſiderably leſs than the male, weighing only fifteen ounces. Her colours in general are leſs vivid; her breaſt and belly are ſpotted with white; and the tips of ſome of the covert-feathers are of the ſame colour.

This ſpecies ſeems peculiar to Britain, as it is only mentioned by natives of this country, or at leaſt is deſcribed by others as a bird belonging to this iſland.

Theſe birds pair in the ſpring, and lay from ſix to ten eggs. The young brood follows the hen during the whole ſummer; and in winter they unite in flocks of forty or fifty, and become remarkably ſhy and wild. They are never ſeen in the vallies, but always keep on the ſummits of hills, where they feed on mountain-berries and the tops of heath.

Grous, White, the White-game; the Tetrao Lagopus of Linnæus. See Ptarmigan.

Grous, Long-Tailed. This bird, which is about the ſize of the pheaſant, is common to Hudſon's Bay and other northern parts of America. The bill is duſky; the head and neck are of a bright reddiſh brown colour, variegated with tranſverſe waved duſky lines; above and beneath each eye, and on the under-ſide of the head, the feathers are light brown; the plumage of the back, wings, and tail, is black in the middle, indented with bright brown on the ſides, and tranſverſely marked with black and brown at the tips; the covert-feathers within-ſide the wings are duſky and white mixed in tranſverſe lines; the outward coverts of the wings, and the quill-feathers next the back, have white tips; and the primaries have ſpots of white along their outer webs. The two middle feathers of the tail are conſiderably the longeſt, the reſt gradually ſhortening on each ſide; the breaſt, from being brown on it's upper part, by degrees becomes white; as do the belly, the ſides under the wings, and the covert-feathers under the tail. The legs are covered with fine filiform feathers of a whitiſh brown colour tranſverſely variegated with duſky lines; the toes and claws are duſky; and each toe is pectinated on both ſides.

Grous, Little, Pin-Tailed. This ſpecies is about the ſize of the partridge, though it's ſhape is more like that of the dove: the wings, when cloſed, meaſure eight inches; the bill is of a brown, or horn-colour, darkiſh at the point, and ſhaped much like that of the common hen; the head is aſh-coloured, but round the eyes it is tinctured with orange; above the legs there is a black line; and the throat, from the bill downwards about an inch, is alſo black. The lower part of the neck before has a ſemilunar, orange-coloured mark, bordered above and beneath with narrow black lines; the remainder of the breaſt and belly, the thighs, the fore-part of the legs, and under the tail, are covered with white feathers; the coverts beneath the tail are mixed with a little black and reddiſh brown; and the hinder part of the neck and back is covered with browniſh feathers, having their tips more yellow and light, and the middle parts ſhaded by duſky tranſverſe lines. The rump, and the upper part of the tail, are more regularly marked with tranſverſe lines of orange and black; the ſide-feathers of the tail are tipt with

with white, and become gradually ſhorter from the centre; but the two middlemoſt feathers are much longer than any of the reſt, very narrow, and of a duſky colour. The covert-feathers of the wings are beautifully variegated with arch lines of an orange and coffee colour, their tips being white; the quills next the back are of the ſame colour with the back itſelf, and the reſt are a dark aſh-colour, becoming gradually black towards their tips; the fore-parts of the legs are covered with white feathers, like hair; and the feet are bare, and aſh-coloured.

This ſpecies, which is found in the vicinity of Aleppo, was firſt deſcribed by Dr. Ruſſel.

GRUB. The Engliſh name of the hexapode worms or maggots hatched from the eggs of beetles. They are excellent bait for ſeveral ſpecies of fiſhes. See SCARABÆUS.

GRUB, BOX, OR BOX PUCERON. A kind of inſect approaching to the nature of the puceron of the elder and other trees; but differing from that animal in ſome eſſential characters, which refer it more properly to the ſame genus with the fig-inſect, or falſe puceron.

Theſe inſects frequently change their ſkins and colours, after the manner of pucerons. At firſt they are reddiſh, and extremely ſmall; after this, they diveſt themſelves of their ſkins, and become yellowiſh; then of a deeper yellow, ſpotted with black; and, finally, when at their full growth, they are greeniſh, with black antennæ. The exuviæ which theſe creatures leave behind them have often a ſmall portion of their excrements affixed to them.

Reaumur, who was indefatigable in his exertions to know the hiſtory of theſe minute inſects, found that they finally became flies of a peculiar kind, reſembling thoſe of the fig-inſect: they hopped after the manner of graſhoppers, but with very ſhort bounds; and the genitals of both ſexes were eaſily perceived in the different individuals; though he was never able to diſcover any eggs, or embryo worms, in the female.

GRUINA. An appellation given by ſome authors to the tipula, or father-long-legs; ſo called from the ſimilarity of it's legs to thoſe of the crane.

GRUNDEL, OR GRUNDLING. A provincial appellation for the common loach; a ſmall freſh-water fiſh known among authors by the names of cobitis and fundulus.

GRUNDLING. A German name for the gobio fluviatilis, or common gudgeon.

GRUNDULUS. A claſſical term for the grundling, or loach, a ſpecies of the cobitis; and diſtinguiſhed by Artedi under the name of the ſmooth-ſpotted cobitis with a cylindric body.

GRUNNIENS PISCIS, OR GRUNTING FISH. This fiſh, which is caught in many parts of the oriental ſeas, is by the Dutch called Knorre Pot. It ſeems to be of the gurnard kind, and nearly related to the guabi-coara of the Brazilians. When firſt taken out of the water, it makes a remarkable grunting noiſe, from which circumſtance it derives it's name. It has two lateral lines on each ſide running from the gills to the tail, one of them being brown and the other yellow; it is covered with very ſmall ſcales; and is a very fat and fleſhy fiſh of an excellent flavour. It ſeldom exceeds ſeven inches in length; but it's head is large and diſproportionable.

GRUS. The claſſical name for the crane. See CRANE.

GRUS BALEARICA. See CRANE, BALEARIC.

GRYGALLUS. The common claſſical appellation for the grous. See GROUS.

GRYLLOTALPA. A name given by authors in general to the mole-cricket. See CRICKET, MOLE.

GRYLLUS. An appellation given by ſome writers to the conger, or ſea-eel. Ritterſhuſius, who has publiſhed commentaries on Oppian's Halieutics, has called the gongros of that author by this word, but certainly very improperly. Artedi, in order to obviate all occaſion of error in future, has not allowed this fiſh any generic name; but makes it a ſpecies of his genus of muræna, and diſtinguiſhes it from all the others by the name of the muræna with the rim of the back-fin black.

GRYLLUS VULGARIS. A name given by Geſner and Bellonius to the ophidion of the generality of authors; and diſtinguiſhed by Artedi under that of the ophidion with four cirri or beards at the lower jaw. Pliny calls this fiſh the piſciculus congro ſimilis.

GUACAGUACA. The Brazilian appellation for a bird of the larus or gull kind; the eggs of which are much valued, though the fleſh is reckoned improper for food. The Portugueſe call this bird the gaviota.

GUACARI. An American fiſh of a roundiſh, or, in ſome varieties, of a pyramidal figure. It's head is flat below, and roundiſh on the upper part; it's mouth, which is ſmall and round, is placed in the under-part of the head, and furniſhed with a ſort of beard reſembling ſhort ſegments of hogs briſtles; the back fin is ſomewhat prickly, as in the perch; the tail is ſupported by ſtrong nerves, and very forked; the head is covered with a hard ſhelly cruſt, and the body with rough triangular ſcales having a tubercle in the middle; ſo that the whole fiſh ſeems inveſted with a coat of armour, and has a quadruple arrangement of tubercles on each ſide. The body is entirely of a ſaffron colour, ſomewhat deeper on the belly than on any other part; and is variegated throughout with brown ſpots, each of the ſize of a muſtard-ſeed.

Another variety of this fiſh is wholly brown, ſpotted with ſmall ſpecks of a fine deep black. Both are eſteemed proper for food, and are tolerably well flavoured.

GUACUCUA. A Brazilian appellation for a kind of water-bat.

GUACUIA. A very ſingular fiſh caught on the ſhores of the Brazils; called by ſome authors the veſpertilio aquaticus; and, by others, the monoceros piſcis. The anterior part of the body of this fiſh is ſhaped like a plough; the head is about ſix inches long, and four wide in the broadeſt part; the hinder part of the body is round and pointed towards the tail; the general figure is broad and flat; and from between the eyes ſprings a ſingle horn, near two fingers in length, hard and conical. The mouth is pretty wide, but deſtitute of teeth; the ſkin is tough, but without ſcales; and the ventral fins ſeem to anſwer the purpoſes of feet. This animal is brown on the back, red on the belly, and full of tubercles; approaching the moſt nearly of any other fiſh to the rana piſcatrix.

GUAIA APARA. The name of a South American crab very beautifully variegated; one end of the body being terminated by a circle, and the other by a right line. It is about three inches

broad, and two and a half long. The fore-part of the ſhell is of a dark brown colour variegated with whitiſh ſpots; and the hinder part is a whitiſh yellow, adorned with brown longitudinal ſtreaks. It has eight roundiſh feet or claws, beſides the two great claws or nippers, each of which is two inches and a half long and half an inch broad: the upper parts of theſe claws are armed and dentated like the comb of a cock; and the nippers ſomewhat reſemble the bill of a bird; which, with the whole claw, repreſents the fore-part of the head of a cock. This crab, in ſwimming, blows the water up like the bubbling of a ſpring.

GUAIBA-COARA. An American fiſh, called by the Portugueſe Burace de Velha. The body is flat, but the back is prominent; it's greateſt length is eight inches; and it's breadth is equal to a third of it's length. Theſe fiſh are caught among the rocks and near the ſhores of the Brazils in great abundance, and are eaten both by the natives of the country and the Portugueſe ſettlers.

GUAIMINIBIQUE. An appellation given by many authors to the humming-bird, called alſo guainumbi.

GUALACLING. The Philippine name for a bird of the ſtarling kind about the ſize of the dove. It's colour is a plain black, unleſs when viewed in the ſun, and then it reflects a great variety of very beautiful tints. This bird feeds on fruits; and is very briſk and lively in it's diſpoſition.

GUAMAJACU APE. A name given by Marcgrave and others to the piſcis triangularis.

GUAMAJACU ATINGA. A fiſh of the orbis kind, uſually about ſix inches in length, having a frog-ſhaped mouth; and, inſtead of teeth, furniſhed with a hard bone above and below. The holes for the gills are very large, near which there are two ſquare, broad, and ſhort fins; the head is covered with a hard bony ſhell; and the whole body with prickles, except on the belly, which is as ſoft as that of the frog: theſe prickles are ſo many ſmall-pointed bones. This animal can at pleaſure inflate it's whole body into the reſemblance of a bladder; and it's fleſh is eſteemed poiſonous.

GUAMAJACU GUARA. An appellation given by ſome authors to that ſpecies of the hyſtrix, or porcupine, called by Marcgrave diabe.

GUANA. A ſpecies of American lizard.

GUANACO. A variety of the llama, or American camel. See CAMEL, LLAMA.

GUANHUMI. A name frequently given to the Indian land-crab, with a roundiſh body, ſlightly compreſſed, and of the ſize of an orange. It has eight legs or claws five inches long, the lower parts of which are covered with long hairs; the mouth is large, and hairy on it's ſides, as well as the reſt of the body; about the mouth there are two retractile feelers; and the eyes likewiſe may be extended or drawn back at pleaſure.

GUAPERVA. An American fiſh of the rana piſcatrix kind, but remarkably ſmall, and differing from that ſingular creature in ſeveral eſſentials. It is ſeldom more than three inches long, and one and a half broad; it has no gills; it's mouth is large, projected like that of the dog, and furniſhed with extremely minute teeth; it's eyes are very ſmall; on the middle of it's upper lip grows a ſmall upright horn; and before it a ſlender filament, half a finger in length, turned backwards, and clubbed at the extremity. It has one large dorſal fin, and two ſmall ventral fins; and on each ſide of the body riſes a kind of arm, which degenerates into a fin towards the extremity. This fiſh is entirely covered with a tough ſkin, rough on the back, and ſmooth on the belly; and the colour is a reddiſh brown, marked with large black points.

GUARA. A Brazilian bird, called by Cluſius Numenius Indicus, or the Indian Curlew. It is about the ſize of the platea, or ſpoon-bill; the beak is long, and of a greyiſh colour; the tail is ſhort, and, when cloſed, concealed by the wings; and the colour of the whole body is a fine vivid red, except that the long wing-feathers are tipped with black at their extremities. When firſt hatched from the egg, this bird is black; afterwards it becomes greyiſh; and, laſtly, changes to a beautiful red.

GUARACAPEMA. A term uſed by ſome authors to expreſs the fiſh more uſually called the dorado, or auratus piſcis.

GUARA-TEREBA. An American fiſh of the cuculus kind, approaching to the nature of the trachurus Brazilienſis. It is commonly about five inches long; the head is obtuſe; and the mouth is furniſhed with very ſmall teeth. The lateral lines towards the tail are armed with prickly hooks, pointing backwards; and the tail is bifid.

GUARAUNA. An aquatic bird about the ſize of the ſnipe, common in the Brazils. The bill is ſtraight, ſlightly hooked at the end, and about four inches long; the body is about the ſame length; the colour is a duſky brown, with an admixture of green; and the fleſh is much admired for it's delicacy.

GUARERUA. A fiſh caught in the Brazilian ſeas. It's body, which is compreſſed, is about four inches long, and three broad; and it has a ſmall mouth, and very minute teeth. On the upper part of the body, and on the belly, there is a long broad fin, both which terminate in a thorny point; the tail is cuneiform; the ſcales are black, with yellow edges; all the fins are alſo black; and about the mouth there is an iron-coloured line, having another placed perpendicularly over it. The body is ſurrounded with three ſtripes, two of which run through the broad and hinder part of the fins; and the tail is divided by a third.

GUARIBA; the Simia Beelzebub of Linnæus. This animal, which is of the monkey kind, is common in the Weſt Indies. It is of the ſize of the fox; the face is prominent; the eyes are black, and ſhining; the ears are ſmall, and round; the tail is very long, naked towards the end, and extremely flexible, the creature frequently twiſting it round trees, and ſuſpending itſelf by it. The body is entirely covered with fine black ſhining hairs, except on the legs and part of the tail, where they are brown: theſe hairs are ſo nicely diſpoſed over the animal, that it appears perfectly ſmooth, except that it has a kind of beard under the chin and throat.

Theſe animals are prodigiouſly numerous in the woods of Brazil and Guiana, and make a very loud and hideous noiſe. It is very common for one of them to begin his note, and the whole aſſembly to remain mute around him. According to Marcgrave, (who informs us that he has frequently been an eye-witneſs of their proceedings) they meet in large troops, before and after mid day, when they form a large circle. One of them, placing himſelf above the reſt, begins to make a loud noiſe:

after

after he has ſung in this manner by himſelf for ſome time, the reſt obſerving the moſt perfect ſilence, he lifts up his hand, and immediately the whole company joins in chorus. This intolerable yell is kept up, without intermiſſion, till the ſame monkey who gave the ſignal for their beginning, elevates his hand a ſecond time, when they all become ſilent in an inſtant. He then exalts his voice again ſingly, and ſo finiſhes the buſineſs of the aſſembly.

Theſe monkies carry their offspring on their backs; and bound very nimbly from tree to tree, the young clinging faſt to the bodies of their parents. They are very fierce, and totally intractible.

There is alſo another ſpecies conſiderably larger; which Marcgrave poſitively aſſures us, often attack the negro women as they traverſe the woods, and even lie with them by force.

GUARUGUARU. A ſmall American freſh-water fiſh, ſeldom exceeding one inch and a half in length, and having a very ſlender body. It is caught in lakes and ponds; and it's fleſh is eſteemed very agreeable.

GUATUCUPA. A Brazilian fiſh which grows to the length of two feet. It's back is a little elevated; it's mouth is ſmall, and beſet with ſharp teeth; and it has only one long dorſal fin, the rays of which are rigid and prickly. It is caught among rocks; and it's fleſh is extremely well-flavoured.

GUATUCUSA. An American fiſh, approaching to the nature of the coracinus of the Mediterranean; by ſome called corvina. It is of an oblong ſhape; it's back is a little prominent; it's belly is perfectly flat and even; and it's uſual length is from twelve to twenty inches.

GUDGEON; the Gobio, and Gobio Fluviatilis, of authors. In the Linnæan ſyſtem, the Gudgeon is a ſpecies of the cyprinus; and, according to the Artedian ſyſtem, the gobius is made the name of another genus of fiſhes. This fiſh, which is generally found in gentle ſtreams, is about five or ſix inches long; the body is round; the ſcales are ſmall; the back is brown, or olive-coloured; and the belly is whitiſh. The irides are tinged with red, the gill-covers with green and ſilver; and at each corner of the mouth there is a ſingle barb. The tail is forked; and both that and the dorſal fin are ſpotted with black.

Theſe fiſh grow to a much larger ſize in ſome rivers than in others; and a few, we are informed, have been caught in the Cole, near Uxbridge, each of which weighed a whole pound. Their fleſh is highly eſteemed, and deemed little inferior to that of ſmelts.

The Gudgeon bites very eagerly from the end of March till Michaelmas, and may be caught with a variety of baits: it may be drawn to any particular ſpot, by raking the bed of the river; a practice frequently adopted, and always found ſucceſsful.

There is another variety of the freſh-water Gudgeon found in Germany, and there called a wapper. It is of a more tapering ſhape than the former, grows very ſmall towards the tail, and it's colours are whiter and leſs ſpotted.

GUDGEON, SEA. See GOBY, and GOGET.

GUEBUCU. An appellation given by ſome authors to the fiſh more uſually called the bicauda, a kind of ſword-fiſh.

GUFFER. A name given by Sibbald, and ſome other writers, to the eel-pout.

GUILLEM. A provincial appellation for the bird called by the generality of authors lommia, and in ſome places the kiddaw and ſea-hen.

GUILLEMOT; the Colymbus Troile of Linnæus. This bird is about ſeventeen inches long, and upwards of twenty-ſeven broad. The bill is three inches long, black, ſtraight, and ſharp-pointed; and near the end of the lower mandible there is a ſmall proceſs: the feathers on the upper part of the bill are ſhort, and ſoft as velvet; and from the eye to the hind-part of the head there is a ſmall diviſion of the plumage. The head, neck, back, wings, and tail, are of a deep mouſe-colour; the tips of the leſſer quill-feathers are white; the entire under-ſide of the body is pure white; the ſides under the wings are marked with duſky lines; and the legs are duſky.

Theſe birds are found in amazing numbers on the cliffs which encircle ſeveral parts of our coaſts. The Guillemot is a very ſimple bird; and, though it's companions be ſhot one by one, it will not quit it's ſtation. Like the auk, which it ſtrongly reſembles, it lays only one egg, ſometimes of a pale blue colour, and at others white, ſpotted, or elegantly ſtreaked with interſecting lines. It continues near the Orkneys during the whole winter.

GUILLEMOT, BLACK; the Colymbus Grylle of Linnæus. This ſpecies meaſures fourteen inches in length, the expanſion of it's wings being twenty-two. The bill is an inch and a half long, ſtraight, ſlender, and black; on each wing there is a large bed of white; the tips of the leſſer quill-feathers, and the inner coverts of the wings, are white; but, excepting theſe, the whole plumage is black. The tail conſiſts of twelve feathers; and the legs and feet are red. In winter, this bird is ſaid to change to white; and a variety, ſpotted with black and white, is frequently ſeen in ſome parts of Scotland.

The Black Guillemot frequents the Baſs Iſland, in Scotland; the Iſle of St. Kilda; the Faro Iſlands; and, according to Pennant, the rocks of Llandidno, in Caernarvonſhire. It continues always at ſea, except during the ſeaſon of incubation; and is very difficult to be ſhot, diving to the bottom at the leaſt alarm. The Welſh call this bird Caſgan Longwr, or the Sailor's Hatred, from a ſuperſtitious notion that it's appearance prognoſticates a ſtorm. It viſits St. Kilda in March; builds a ſubterraneous neſt; and lays a ſingle grey egg, ſometimes ſpotted with ruſt and ſpeckled with aſh-colour.

GUILLEMOT, LESSER. This ſpecies is ſeen on the Welſh coaſts in the winter ſeaſon, though not very frequently: it's breeding-place is unknown, as it has never been obſerved on the rocks among congenerous birds. It's weight is nineteen ounces; it's length is ſixteen inches, and the expanſion of it's wings twenty-ſix. The top of the head, the whole upper part of the body, the wings, and the tail, are of a very dark mouſe-colour; the cheeks, throat, and lower ſide of the body, are white; from the angle of the eye riſes a duſky ſtroke, pointing to the hind-part of the head; the tips of the ſecondary feathers are white; the tail, which conſiſts of twelve feathers, is very ſhort; and the legs are black.

GUINEA-HEN; the Meleagris of ſome authors, and the Numida of Linnæus. This remarkable bird in ſome meaſure unites the characteriſtics of the pheaſant and the turkey, having the fine delicate

delicate ſhape of the one, and the bare head of the other. It is about the ſize of the common hen, but it's legs and neck are much longer; the body is ſloped like that of the partridge; the colour is a dark grey, beautifully ſpotted with ſmall ſpecks of white; a black ring encircles the neck; the head, which is reddiſh, has on it's top a hard horny protuberance of a browniſh colour; the ſpace under the eyes is blue; and a red fleſhy appendage proceeds from the upper chap, ſomewhat reſembling the wattles of a cock.

This bird is well known all over Europe, particularly among the nations which border on the Mediterranean and the coaſt of Africa. In different countries it has obtained different names: ſome call it the Barbary hen; and others, the Tamis bird, and the bird of Numidia. It was probably firſt imported from Guinea to Britain; and therefore receives it's name from the place of it's nativity.

Theſe birds, which are naturally gregarious, breed up their young in common, the females tending the brood of others with as much aſſiduity as their own. They thrive very well in this climate; but it is almoſt impoſſible to render them ſo tame and domeſtic as the generality of Engliſh fowls. The females alſo are leſs careful with reſpect to the buſineſs of hatching and rearing their brood than any other birds of the gallinaceous kind; for which reaſon it has been found expedient to place the eggs of the Guinea-fowl under the common hen, whoſe maternal attention is invariably exerted to protect whatever is committed to her care. The young Guinea-fowls are very beautiful, appearing like ſo many partridges; their beaks and legs are red; and their whole plumage is of the colour of that of partridges. Though the eggs of the Guinea-Hen be occaſionally removed from the neſt, yet if care be taken always to leave one, ſhe will continue to lay till ſhe has depoſited a hundred, or a hundred and fifty; which, as well as the fleſh, are reckoned ſalubrious and agreeable food.

This bird is very ſprightly, active, and of a reſtleſs and turbulent diſpoſition. It runs very ſwiftly, after the manner of the quail and the partridge; but it's wings are ſhort, and ill adapted for flight: however, it does not reſide among other domeſtic fowls, but aſcends ſome houſe or tree, where it imagines itſelf beyond the reach of danger. It's cry is ſharp and diſagreeable; it's quarrelſome diſpoſition keeps it in continual warfare, unleſs it is allowed to rule the yard; and it's agility, joined to the ſharpneſs of it's beak, generally ſecure it the victory over every opponent.

The Guinea-Hen, or, as it is frequently called, the Pintada, is ſo very common in America, that many have ſuppoſed it to be a native of the New World; but this is certainly an erroneous conjecture: the origin of theſe birds is in Guinea, where they are found, in flocks of ſeveral hundreds together, perching on trees, and feeding on worms and graſhoppers. They were firſt imported into America in 1508, with ſome cargoes of negro ſlaves. The Spaniards, neither then, nor at any ſucceeding period, have attempted to render them domeſtic; but they ſtill continue wild in the ſavannahs, where they have increaſed ſo prodigiouſly, that they may naturally enough appear to be natives.

GUINEA-PIG; the Mus Porcellus of Linnæus. This animal, which ſome naturaliſts call the common cavy, is a native of the warmer climates; but has ſo long been domeſticated, and ſo widely diffuſed, that it is now become general in every part of the world. Few are unacquainted with the figure of this little animal: in ſome places it is regarded as a particular favourite; and is often known even to ſupplant the lap-dog. It is ſmaller than the rabbit; it's legs are conſiderably ſhorter, indeed they are ſcarcely ſeen except when the creature moves; it's neck alſo is ſo ſhort, that it's head ſeems affixed to it's ſhoulders; it's ears are ſhort, thin, and tranſparent; it's hair is like that of a ſucking-pig; and it has not even the leaſt veſtige of a tail. In other reſpects, it bears ſome reſemblance to the rabbit. When it moves, it's body lengthens like that animal; and, when at reſt, it contracts it's form in the ſame manner. It's noſe is furniſhed with the rabbit-lip, except that it's noſtrils are much farther apart. Like all other animals which have been reduced to ſubjection and taken under human protection, it's colour varies; in ſome it is white; in ſome red; and, in others, ſpeckled. It ſtroaks it's head with it's fore-feet like the rabbit; and, like it, ſits on it's hind-legs; but it differs again from that animal in the number of it's toes, having four on the fore-feet, and only three on the hind.

Theſe animals are, of all others, the moſt helpleſs and inoffenſive, ſcarcely poſſeſſing ſufficient courage to defend themſelves from the mouſe, the meaneſt of all quadrupeds: their only animoſities are exerted againſt each other; and in ſuch conflicts they will often fight with great obſtinacy and perſeverance: but againſt all other aggreſſors their only remedy is patience, non-reſiſtance, or flight. It is therefore ſomewhat wonderful how they can protect themſelves in a ſavage ſtate, ſince they have neither ſtrength, ſwiftneſs, nor even the natural inſtincts of ſelf-preſervation, obſervable in other animals of almoſt every deſcription. In a domeſtic ſtate, indeed, they owe their ſafety ſolely to the unceaſing protection of the human race: they muſt be conſtantly attended, guarded from the ſeverity of the brumal cold, and ſecured from the attacks of other domeſtic animals, which are apt to inſult them on every occaſion. Such indeed is their ſtupidity, that they ſuffer cats to devour them without reſiſtance; and, different from all other creatures, the female beholds her young deſtroyed, without once attempting to ſave them.

The favourite food of Guinea-Pigs is bran, parſley, or cabbage-leaves; but there are ſcarcely any vegetables cultivated in Engliſh gardens which they will not readily eat. The carrot-top ſeems a peculiar dainty; and thoſe who are ſtudious to preſerve the health of theſe animals, ſhould often vary their food; for, when ſubſiſted on a kind either too ſucculent or too dry, the effects are quickly viſible on their conſtitutions. When fed with recent vegetables, they ſeldom drink; but it often happens that, inſpired by nature, they ſeek drier food when the former diſagrees with them: they then gnaw cloaths, paper, or whatever dry ſubſtances they meet with; and, on theſe occaſions, they are obſerved to drink, which they do by lapping. They are particularly fond of a beverage of new milk; but, in caſes of neceſſity, are ſatisfied with water.

Their motion is performed like that of rabbits, though much leſs ſwiftly; and, when confined in a room, they ſeldom croſs the floor, but generally keep cloſe to the wall. The male commonly drives

drives the female before him, never moving a-breaſt together; but the one ſeems invariably to tread in the footſteps of the other. They ſhew a predilection for the darkeſt receſſes and moſt intricate retreats; where, if they are furniſhed with a bed of hay, they continue to ſleep together, and ſeldom venture out but when they ſuppoſe themſelves free from annoyance. When they quit their retreat, they ſpring ſwiftly forwards, ſtop at the entrance, liſten, look round, and if they perceive the ſlighteſt ſymptom of danger, they run back with precipitation. However, in very cold weather, they appear more active; which is probably occaſioned by the uneaſy ſenſations they feel from the ſeverity of the air.

The Guinea-Pig is a very cleanly creature, and totally different from that which affords it a name. If the young ones happen to be ſoiled in the dirt, or any way diſcompoſed, the female contracts ſuch an averſion to them, that ſhe never permits them to viſit her more: indeed, her ſole employment, as well as that of the male, ſeems to conſiſt in ſmoothing the ſkin, diſpoſing the hair, and improving it's gloſs. The male and female aſſume this office by turns; and, when they have bruſhed up each other, they then turn their attention to their young, taking particular care to make their hair lie ſmooth, and biting them if they appear refractory.

As theſe creatures are ſo ſolicitous about adorning themſelves, their habitations ſhould be regularly cleaned, and beds of freſh hay provided for them weekly. Being originally ſprung from a warm climate, they are naturally chilly in this: cleanlineſs, therefore, is favourable to warmth, and helps to expel moiſture. With moderate care, they may be reared without the aid of artificial heat; but, in general, it is impoſſible to keep them from the fire in winter, if they have once been permitted to feel the benefit of it.

Guinea-Pigs repoſe flat on their bellies, pretty much in their uſual poſture, except that they love to have their fore-feet higheſt; and for this purpoſe they turn themſelves ſeveral times round before they lie down, in order to fix on the moſt convenient ſituations. Like hares, they ſleep with their eyes half open, and continue extremely wakeful if ſuſpicious of danger. The male and female never repoſe at the ſame time; but, when he reſts, ſhe remains on the watch, ſilently continuing to guard him, with her head turned towards the place where he lies. When ſhe ſuppoſes that he has had ſufficient refreſhment, ſhe then awakes him by a kind of murmuring noiſe, forces him from his bed, and occupies his place. He then performs the ſame kind offices to the female in his turn, and continues vigilant till ſhe has finiſhed her nap.

Extremely ſalacious in their natures, theſe animals are capable of propagating their kind at the age of ſix weeks. The female goes with young about five weeks, and uſually brings forth from three to five at a time: but, what is very extraordinary, ſhe admits the male the very day ſhe has brought forth, and becomes pregnant again; ſo that their increaſe is really aſtoniſhing. She ſuckles her young about twelve or fifteen days; but, during that time, ſhe ſeems incapable of diſtinguiſhing between her own and the progeny of another. The young are, like all others of the hare kind, produced with their eyes open; and, in leſs than half a day, equal their dams in agility. Though the parent is furniſhed with but two teats, ſhe abundantly ſupplies her offſpring with milk; and they are almoſt capable of ſubſiſting on vegetables from their very birth. If the young are permitted to continue long together, the ſtronger, as in all other ſocieties, will ſoon begin to uſurp dominion over the weaker. Their animoſities, which are frequent and obſtinate, and their jealouſies very apparent, often originate from a deſire of the warmeſt place, or the moſt agreeable food. If one of them happens to be more fortunate in this reſpect than it's companion, the ſtrongeſt generally diſcovers the advantage, and endeavours to poſſeſs it. Their manner of fighting is ridiculous enough to a ſpectator: one of them ſeizes the hair on the nape of the other's neck with it's fore-teeth, and attempts to tear it away; the other, by way of retaliation, turns it's poſteriors to it's enemy, kicks up behind like a horſe, and with it's hinder claws ſcratches the ſides of it's antagoniſt; ſo that they are ſometimes mutually covered with blood.

But, though ſufficiently formidable to each other, with regard to the reſt of animated nature, theſe creatures, as already obſerved, are the moſt timorous on earth; a falling leaf diſturbs them, and the moſt ignoble and feeble adverſary overcomes them: hence they are tamed with difficulty; and will ſuffer none to approach them except the perſon by whom they are fed. They grunt ſomewhat like young pigs; and their notes expreſſive of pain, are very piercing.

Some people eat the fleſh of theſe animals; but it by no means ſufficiently compenſates for the trouble of rearing them.

GUINIAD, or GWINIAD; the Salmo Lavaretus of Linnæus. A fiſh of the truttaceous kind, generally known among authors by the name of ferra, and commonly caught in the lakes of Wales, England, and Scotland. It is alſo found in Switzerland, Italy, Norway, Sweden, Lapland, and Ireland.

The Scotch have a tradition, that this fiſh was firſt introduced into their country by the beauteous but unfortunate Queen Mary. Sibbald calls it Vandeſius, from the French Vendoiſe, a Dace; to which an incurious obſerver might be tempted to compare it from the whiteneſs of it's ſcales. It's Britiſh name Gwiniad, or Whiting, was given it on account of the whiteneſs of it's body.

The Guiniad has ſometimes been found to weigh three or four pounds; it's length is from eleven to fifteen inches; and it's greateſt depth from three to four. The head is ſmall, ſmooth, and duſky; the eyes are large; the pupil is of a deep blue colour; the noſe is obtuſe; the jaws are of equal lengths; and the mouth is ſmall, and deſtitute of teeth. The covers of the gills are ſilvery, ſprinkled with black; and the branchioſtegous rays are nine in number. The back is ſlightly arched and carinated; the colour, as far as the lateral lines, is gloſſed with deep blue and purple, but near theſe aſſumes a ſilvery caſt tinged with gold; and, beneath them, thoſe colours entirely prevail. The lateral line is ſtraight, and compoſed of a ſeries of diſtinct ſpots of a duſky hue; the belly is a little prominent; the firſt dorſal fin, which is placed almoſt in the middle, conſiſts of fourteen branched rays; and the ſecond, which is thin and tranſparent, is ſituated near the tail. The pectoral fins contain eighteen rays; the ventral twelve; and the anal fifteen, all branched at their extremities. The ventral fins, in ſome, are

of a fine azure blue colour; in others, ſprinkled with blue: the tail is extremely bifid; and the ſcales, which are large, adhere cloſe to the body.

The fleſh of the Guiniad has an inſipid taſte. It dies almoſt immediately after being taken out of the water; and, if not ſalted, ſoon becomes putrid.

Theſe fiſh, which are gregarious, approach the ſhores in vaſt ſhoals in ſpring and ſummer, proving a great relief to the neceſſities of the poor. In the Welſh lakes, the Guiniad ſpawns about the month of December. Camden obſerves, that this fiſh never enters the Dee, nor the ſalmon ever ventures into the lake; but though this is generally the caſe, the firſt has been known to ſtray ſome miles down the river, and the ſalmon has been caught treſpaſſing in the lake.

GUIRA-ACANGATARA. A Brazilian bird deſcribed by Marcgrave, of the wood-pecker kind, about the ſize of the great ſpotted wood-pecker of Europe. It is common in the woods of different parts of America, and makes a loud and diſagreeable noiſe.

GUIRA-CENOIA. A ſmall Brazilian bird of the parus or titmouſe kind. It's head, throat, breaſt, belly, and the lower part of it's beak, are of a fine blue colour; it's neck, and the upper half of it's back, are black; it's wings are variegated with black and blue; it's tail is black; and it's legs are brown.

GUIRA-COEREBA. A Brazilian bird, deſcribed by Marcgrave, of the ſize of the greenfinch. The top of the head is ornamented with a large ſpot of ſea-green feathers; the reſt of the head, the throat, the breaſt, the belly, and the lower half of the back, are of a fine ſhining blue colour, variegated with white; a fine blue line croſſes the wings; the upper half of the back is a very deep black, gloſſy and ſhining; and the tail is black.

GUIRA-GUAINUMBI. The name of a bird of the king-fiſher or merops kind; which, from the quantity of it's feathers, appears of the ſize of the pigeon, though in reality it is no larger than the thruſh. The bill, which is longiſh and black, is a little crooked, and ſerrated at the edges; the legs are very ſhort; the tail is long and narrow; and the colours of the whole body are various and beautiful.

GUIRA-NHEEMGATU. A Brazilian appellation for a bird of the ſparrow kind, common in that country.

GUIRA-PANGA. A bird of the thruſh kind, common in the Brazils, remarkable for the loudneſs and ſhrillneſs of it's voice. It is the largeſt of all the thruſh kind hitherto deſcribed, being about the ſize of a ſmall pigeon.

GUIRA-PERA. A Brazilian bird deſcribed by Marcgrave. It is equal to the lark in ſize; it's beak is ſhort, thick, and black; it's head, neck, back, and belly, are of a pale yellow colour; the lower part of the head, the throat, and the breaſt, are black; and the wings and tail are black and brown, ſlightly varied with ſea-green.

GUIRA-GUACUBERABA. This bird, which is about the ſize of the gold-finch, is a native of the Brazils. The breaſt and the extremity of the back are of a fine orange-colour, mixed with yellow; the crown of the head, the outſide of the neck, and the anterior half of the back, are a pale green; of which colour alſo are the wings and tail, except that there are ſome brown feathers in the former; and the belly and rump are yellow. Under the throat a large black ſpot extends almoſt to the eyes, above which is a line of bright yellow; the beak is ſtraight, ſlender, and pointed; and the feet are brown.

GUIRA-QUEREA. The name of a Brazilian bird of the caprimulgus or goat-ſucker kind, approaching to the figure of the cuckow. Ray deſcribes it as being about the ſize of the lark, with long wings, a long tail, ſhort legs, and the toes connected with a membrane, but not webbed. Whether it is a nocturnal bird, or otherwiſe, we have not learnt; though it is probably of the nature of the caprimulgus, whoſe figure it nearly reſembles.

GUIRA-RANHAENGETA. An appellation given by the native Brazilians to a bird of the œnanthe or wheat-ear kind.

GUIRA-TANGIMA. This bird, which is a native of America, is very remarkable for ſuſpending it's neſt from the extremities of boughs, from whence it receives it's name. It is about the ſize of the magpie: the head is ſmall, and black; the beak is ſtraight, ſharp, and duſky; the lower part of the neck is of the ſame colour with the head; but the upper part at the beginning of the back is of a ſky colour. The tail and wings are alſo entirely black; but in the middle of the latter there is a large white ſpot; and the reſt of the body is a ſky blue.

The Guira-Tangima conſtructs a cylindrical neſt, compoſed of twigs, in a very artful manner: it probably ſuſpends it from the branches of trees in order to avoid the depredations of ſerpents, and ſome quadrupeds which are fond of ovarious food.

GUIRA-TINGA. A Brazilian bird of the heron kind, but conſiderably ſmaller than the common European bird of that name. It walks very erect; it's neck is long; it's feet and legs are greeniſh; and it's body is entirely covered with ſnow-white plumage, which on the neck is more beautiful and ſoft than the down of the oſtrich. Marcgrave informs us, that it is always ſeen above water.

GUIRA-TIRICA. Ray calls this bird Rubicilla Americana. It is a native of the Brazils, and appears to be of the bull-finch kind. It grows to the ſize of the lark; and is furniſhed with a very ſtrong bill.

GUIRA-UPIAGARA. An American ſpecies of ſerpent, ſo called from it's fondneſs for eggs; it's name, in the language of the natives, implying a devourer of eggs. It is of a long, ſlender figure; and is black on the back, and yellow on the belly. It aſcends trees with great facility; and writhes itſelf among the higheſt branches, in queſt of birds neſts, with amazing dexterity.

GUITGUIT. An appellation under which Nieremberg has deſcribed a bird which, he informs us, is about the ſize of the wren; and, notwithſtanding it's ſmallneſs, is much eſteemed for the table. It is entirely of a vivid green colour, and remarkably lively and active.

GULASISI. The Philippine name for a very ſmall and beautiful ſpecies of parrot, common in that country.

GULL. In an extenſive ſenſe, the Gull is the common name of all the larus kind; but is generally limited to a few particular ſpecies, of which the ſubſequent are the moſt common.

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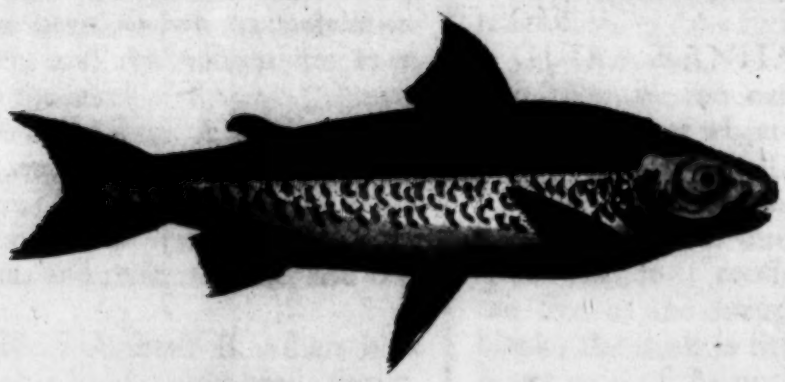
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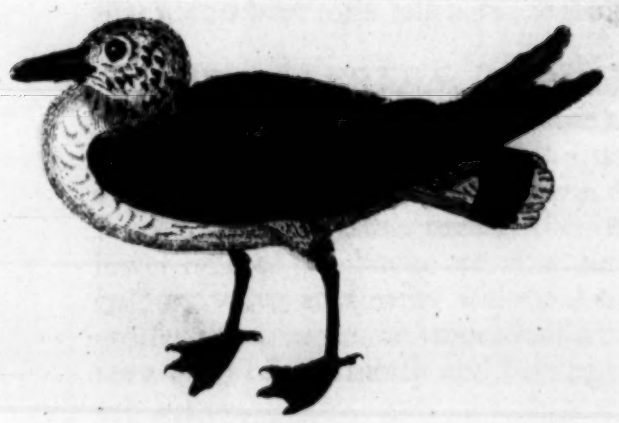
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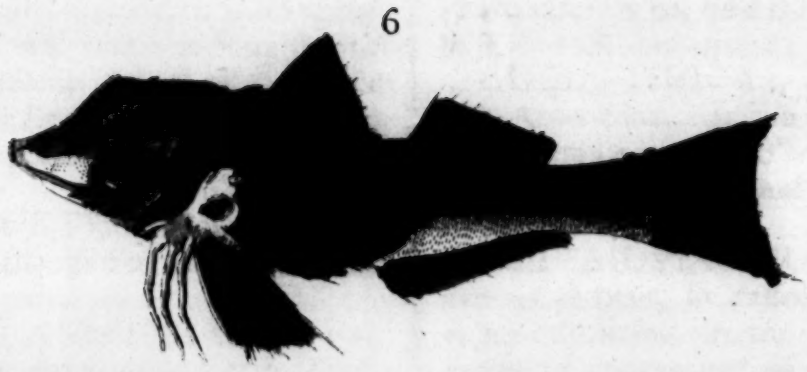
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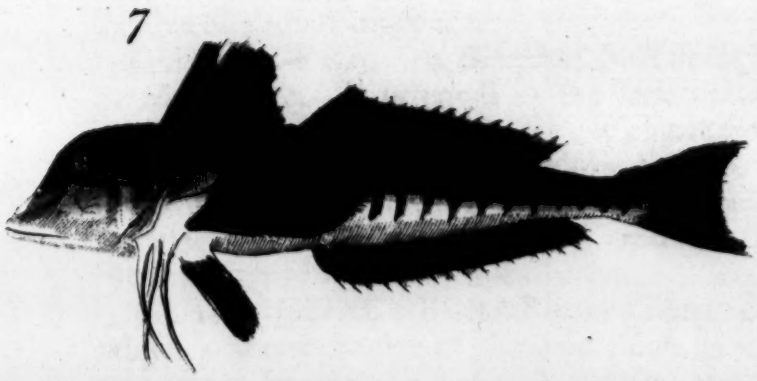
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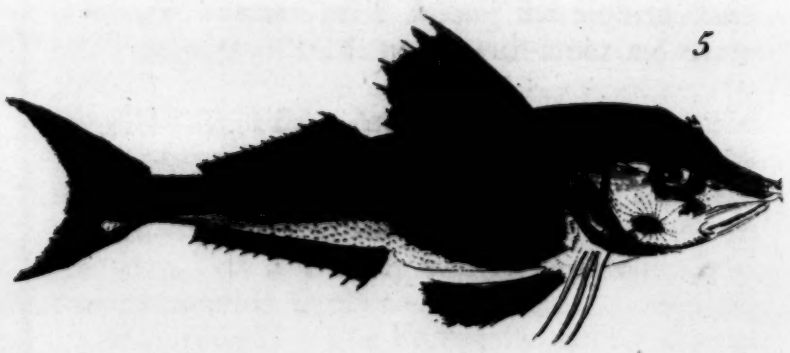
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1. COMMON GULL. 2. WINTER GULL. 3. SPOTTED GUILLEMOT. 4. GUIRA-GUACUBERABA.
5. GREY GURNARD. 6. SAPPHIRINE GURNARD. 7. STREAKED GURNARD. 8. GWINIAD.

Plate LII. Published as the Act directs. by Harrison & Co Oct.r 15 1785.

Gull, Common; the Larus Canus of Linnæus. This bird, which is the moſt numerous of the genus, breeds on the ledges of cliffs that impend the ſea; and, during the winter ſeaſon, frequents almoſt every part of the Britiſh coaſts where the high, bold ſhores, preſent a favourable ſituation. Like other rapacious birds, it lays but few eggs; which circumſtance, added to the numbers continually deſtroyed for ſubſiſtence, has in many places diminiſhed the breed. It generally meaſures about ſeventeen inches in length, and thirty-ſix in breadth: the bill is yellow; the head, neck, tail, and the whole under-ſide of the body, are pure white; the back, and the coverts of the wings, are grey; and the legs are a dull white tinged with green.

Gull, Black-Backed; the Larus Marinus of Linnæus. This ſpecies is about twenty-nine inches long, and the expanſion of the wings almoſt five feet nine inches. The bill, which is very ſtrong and thick, is of a pale yellow colour; the irides are yellow; the head, the neck, the whole under-ſide, the tail, and the lower part of the back, are white; the upper part of the back and wings are black; the quill-feathers are tipt with white; and the legs are of a pale fleſh-colour.

The Black-Backed Gull inhabits various parts of the Britiſh coaſts, and breeds in the higheſt cliffs. It principally ſubſiſts on fiſh; but, for want of more agreeable food, it will devour carrion.

Gull, Brown and Ferruginous; the Larus Cataractes of Linnæus. This bird inhabits Norway, the Ferro Iſlands, Shetland, and the South Sea. It is the moſt formidable of all the Gull kind, preying not only on fiſhes, but alſo on all the leſſer kinds of water-fowl; and, according to ſome authors, on domeſtic poultry and lambs. It poſſeſſes all the native fierceneſs of the eagle in defence of it's young; and, when the inhabitants of the Ferro Iſles viſit it's neſt, we are told that it attacks them with the utmoſt intrepidity; and will ruſh on a knife, or any other inſtrument which is held up for their defence.

In the craggy iſle of Foula, a little weſt of Shetland, this bird is religiouſly preſerved, becauſe it defends the flocks of the natives from eagles, which it purſues with ſo much animoſity, that even theſe very rapacious birds ſeldom venture near it's abode; and on this account the inhabitants impoſe a fine on any perſon who deſtroys one of theſe Gulls.

This ſingular ſpecies, which Pennant calls the Skua Gull, is about two feet long, and four and a half broad: the bill is upwards of two inches in length, hooked at the end, and extremely ſharp; the upper mandible is covered more than half it's extent with a black cere; and the noſtrils, which are placed near the bend, are pervious. The plumage on the head, neck, back, ſcapulars, and coverts of the wings, is a deep brown, marked with ruſt-colour; the ſhafts of the primaries are white; their ends are principally brown, the lower parts on both ſides being white; and the ſecondaries are marked in like manner, forming a great bar of white. The breaſt, belly, and vent, are ferruginous, tinged with aſh-colour; the tail, when ſpread, is circular, and of a deep brown colour, except the ſhafts of the feathers, which are white; the legs are covered with great black ſcales; and the talons are ſtrong, crooked, and black.

Gull, Black-Toed; the Cepphus of Aldrovandus. The Black-Toed Gull is a rare ſpecies in this country. A bird of this kind was formerly ſhot near Oxford, and communicated to the Royal Society. It is about fifteen inches long, and thirty-nine broad: the bill is an inch and a half in length; the upper mandible is covered with a brown cere for a conſiderable way; and the extremity is brown and hooked. The head and neck are of a dirty white colour; the hind part of the latter being plain, and the reſt marked with oblong duſky ſpots. The breaſt and belly are white, interſected with numerous duſky and yellowiſh lines; the plumage on the ſides and vent is barred tranſverſely with black and white; the back, ſcapulars, and coverts of the wings and tail, are black, beautifully edged with white; the ſhafts and tips of the quill-feathers are white; the tail is compoſed of twelve black feathers tipt with white, the two middlemoſt being nearly an inch longer than the reſt; the legs are of a blueiſh lead-colour; and the lower part of the toes and webs are black.

Gull, Arctic; the Larus Paraſiticus of Linnæus. The length of this ſpecies is about twenty-one inches; and the bill, which is about an inch and a half long, is duſky, and pretty much hooked at the end. In the male, the crown of the head is black; the back, wings, and tail, are duſky; the hind-part of the neck, and the whole under-ſide of the body, are white: the tail conſiſts of twelve feathers, the two middlemoſt of which are conſiderably the longeſt; and the legs are ſmall, ſcaly, and black. The female is entirely brown; and the centre feathers of the tail are about two inches ſhorter than in the male.

Linnæus, notwithſtanding his uſual accuracy, has ſeparated this bird from it's mate, and made it a ſynonym to his larus cataractes, a bird very different from this ſpecies.

The Arctic Gull is very common in the Hebrides; and is alſo ſeen in the Orkneys, and on the coaſt of Yorkſhire. All naturaliſts who mention this fowl, agree that it inſtinctively purſues the leſſer Gulls with ſuch unceaſing perſeverance, that they emit their excrements through fear, which it catches up, and devours before they reach the water.

Gull, Herring; the Larus Fuſcus of Linnæus. The length of this ſpecies is twenty-three inches, and the breadth fifty-two; the bill is yellow; the irides are ſtraw-coloured; and the edges of the eye-lids are red. The head, neck, and tail, are white; the back, and the coverts of the wings, are cinereous; and the legs are of a pale fleſh-colour.

The Herring Gull forms a large neſt, of withered graſs, on the cliffs which overhang the ſea; and in it lays three eggs of a dirty white colour ſpotted with black. The young, which are aſh-coloured ſpotted with brown, do not aſſume their proper colours till they are one year old: a circumſtance indeed common to other gulls; and which, not being properly attended to, has occaſioned conſiderable confuſion among naturaliſts.

This Gull is very deſtructive to fiſh, particularly to that ſpecies from which it receives it's name.

Gull, Great, Grey, or Wagel; the Larus Nævius of Linnæus. There are ſeveral varieties of this ſpecies, differing chiefly in ſize; ſome weighing upwards of three pounds, and others not much above two. The bill is black; the irides are duſky; the whole plumage of the head and body, above and below, is a mixture of white, aſh-colour, and brown; the quill-feathers are black;

black; the lower part of the tail is mottled with black and white; towards the extremity there is a dark brown bar; and the tips of the tail-feathers, and the feet, are whitiſh.

Some authors have conſidered this as the young of the Herring Gull: but it ſhould be obſerved, that the original colours of the irides are permanent; and theſe are ſo very different in the two ſpecies now deſcribed, that we may ſafely pronounce them diſtinct.

GULL, WINTER; the Larus Tridactylus of Linnæus. This ſpecies, called alſo the Winter-mew, or Coddy-moddy, during the brumal ſeaſon frequents the marſhy grounds in the interior parts of this iſland. The gelatinous ſubſtance, known by the name of ſtar-ſhot, or ſtar-gelly, originates from this bird, or ſome other of the kind; being only the half-digeſted remains of earth-worms, on which theſe birds feed, diſcharged from their ſtomachs.

The Winter Gull is about eighteen inches long, and thirty-nine broad; the bill, which is two inches long, is black at the tip, and whitiſh towards the baſe; the irides are hazel-coloured; the crown of the head, the hind-part, and the ſides of the neck, are white marked with oblong duſky ſpots; the forehead, the throat, the middle of the breaſt, the belly, and the rump, are white; the back and ſcapulars are a pale grey, the latter being ſpotted with brown; the coverts of the wings are a pale brown, edged with white; the quill-feathers are tipt with white; the tail is white, interſected near the end with a black bar; and the legs are a dirty blueiſh white.

GULL, BLACK-HEADED; the Larus Ridibundus of Linnæus. This ſpecies may eaſily be diſtinguiſhed from all others by it's note, which reſembles a hoarſe-laugh. It meaſures fifteen inches in length, and thirty-ſeven in breadth: the bill is red; the irides are hazel-coloured; and, both above and below the eyes, there is a ſpot of white feathers. The head and throat are black, or duſky; the neck, the under-ſide of the body, and the tail, are a pure white; the back and wings are cinereous; and the legs are of a ſanguine hue.

Theſe Gulls breed in various parts of England, at a diſtance from the ſea: they form their neſts on the ground, of ruſhes or withered graſs; and lay three eggs of a dirty olive-colour, marked with black. They are birds of paſſage; and, after the ſeaſon of incubation, diſperſe to the ſea-coaſts.

Dr. Plott, in his Natural Hiſtory of Staffordſhire, gives a marvellous account of their attachment to the lord of the ſoil where they breed; gravely telling us, that they ſhift their quarters, for a certain time, after his demiſe.

The young of theſe birds were formerly in high eſtimation; and numbers were annually fattened for the table. Whitelock, in his Annals, mentions a piece of ground near Portſmouth, which produced to the owner forty pounds a year by the ſale of pewits; by which name he intends this ſpecies of Gull.

GULYAVAN. A Philippine appellation for a very beautiful bird common in thoſe iſlands. It is of the ſize of the turtle-dove, and charmingly variegated with black and gold-coloured feathers. It is ſaid to feed on fruits; but, with regard to it's other qualities, we are left wholly in the dark.

GUNNELLUS. A name ſometimes applied to the butter-fiſh.

GURGULIO. An appellation given by the ancients to a peculiar claſs of ſcarabæi, or beetles; the characters of which are, that they have long heads, forming trunks after the manner of common flies; and in theſe the horns or antennæ are lodged. Liſter divides theſe into two kinds; the firſt having only one joint in the promuſcis or ſnout, placed near the middle; the other having ſeveral joints, ſituated near the extremity. There are two ſpecies of the former kind, and five of the latter.

GURNARD. A marine fiſh, of which there are ſeveral ſpecies. The diſtinguiſhing characters are theſe: the noſe ſlopes; the head is covered with ſtrong bony plates; there are ſeven branchioſtegous rays; and three ſlender appendages at the baſe of the pectoral fins. The Latins give this fiſh the name of the cuculus, from it's ſuppoſed imitation of the voice of the cuckow; and the Engliſh call it the Gurnard, probably from it's grunting noiſe.

GURNARD, GREY; the Trigla Gurnardus of Linnæus. This ſpecies, which is the moſt common of the kind, is frequently caught in the Britiſh ſeas; and it's fleſh is eſteemed extremely deſireable. It's figure is long and ſlender: the back is of a duſky green colour marked with black, yellow, and white ſpots; the lateral lines are dotted and rough; and, under theſe, the ſides are of a pale hue variegated with numerous white ſpots. The belly is white; the noſe is pretty long, and ſloping; the end is bifurcated; and each ſide is armed with three ſhort ſpines. The eyes are large, above each of which there are two ſhort ſpines; the teeth, which are ſmall, are arranged in the upper and lower jaws, in the roof of the mouth, and on the baſe of the tongue. Near the extremity of the gill-covers, there is a ſtrong, ſharp, long ſpine; and exactly above the pectoral fins there is another. The firſt dorſal fin conſiſts of eight ſpiny rays, and the ſecond of nineteen ſoft rays; the pectoral fins are tranſparent, and ſupported by ten rays, bifurcated from the middle; the ventral fins contain ſix rays, and the anal nineteen; the tail is bifurcated; and the lateral line is very prominent, and ſtrongly ſerrated.

This fiſh bites very eagerly at a red rag, and is uſually taken with the hook in deep water; but is ſometimes found near the ſurface. It frequently meaſures two feet and a half in length.

GURNARD, RED; the Trigla Cuculus of Linnæus. Artedi calls this the wholly red trigla, with the ſnout lightly divided into two horns, and the opercula of the gills ſtriated.

The Red Gurnard, called alſo the rocket, agrees with the tub-fiſh in it's general appearance, but differs from it in ſeveral eſſentials. The covers of the gills are radiated; the ſpines are long and ſlender; and the noſe is armed on each ſide with two ſharp ſpines. The fins, and the body, are of a full red colour; the ſcales are large; the pectoral fins are edged with purple; the lateral line is ſtrongly ſerrated; and the tail is almoſt even at the end.

GURNARD, SAPPHIRINE; the Trigla Hirundo of Linnæus. This ſpecies is frequently caught on the Corniſh coaſts, and ſome other parts of this iſland. It is diſtinguiſhed from the other Gurnards by the breadth and colour of the pectoral fins, which are very broad and long, and of a pale green hue, moſt beautifully ſpotted and edged with a rich deep blue. The dorſal fins are lodged between two rays of ſpines of a ſerrated form; the back is of a greeniſh caſt; the lateral line is rough; the

the ſides are tinged with red; the belly is white; the pupils of the eyes are green, and on the inner corner of each there are two ſmall ſpines.

GURNARD, STREAKED; the Cuculus Lineatus of Ray. The head of this ſpecies is large, and diſtinguiſhed by ſtellated marks; the eyes are large; the coverings of the gills are thorny; and the mouth is ſmall, and deſtitute of teeth. The pectoral fins are large and ſpotted, and beneath them there are three filaments; the colour of the body is red; and the belly is white, marked with a number of ſtreaks pointing downwards from the back. This fiſh is caught on the Corniſh coaſts; and is ſuppoſed by ſome to be the mullis imberbis of Linnæus.

GURNARD, YELLOW. See DRACUNCULUS.

GURNARD, KING OF. The King of the Gurnards probably receives it's name from it's ſize. It is deſtitute of barbs; the ſcales are large; the body is wholly red; the eyes are full and prominent; and the jaws are extremely rough. This ſpecies is caught on the coaſts of the Iſle of Malta.

GUROUNDI. A ſmall Brazilian bird, more commonly called the teitei; which is caged, and much eſteemed for it's ſinging.

GYMNARTHRIDIA. A claſs of inſects, having ſoft naked bodies furniſhed with limbs. Theſe have generally been called Zoophytes, a term expreſſing creatures partly animal, and partly vegetable: but it is now clearly proved, that there are no animals which fall under this deſcription; conſequently, the term Zoophyte ſhould no longer be retained.

Under the claſs of Gymnarthridia are comprehended the limax, the lernea, meduſa, aphrodita, amphitrite, &c.

GYMNIA. A new-eſtabliſhed claſs of animalcules, comprehending ſuch as have neither tails nor any viſible limbs.

GYMNOTUS. A genus of fiſhes of the malacopterygious kind, in the Artedian ſyſtem; but, in the Linnæan, of the order of apodes. The characters are theſe: the branchioſtege membrane contains five bones; the head is furniſhed with lateral covers; the upper lip has two tentacula; the eyes are covered with a ſkin; the body is flatted and carinated under the lower fin; and there is no dorſal fin. Linnæus enumerates five ſpecies of this genus.

GYMNOTUS ELECTRICUS; the Electrical Eel. This very remarkable fiſh has lately been the ſubject of much inveſtigation. Bancroft, in his Natural Hiſtory of Guiana, has given a general deſcription of it's figure and effects; but Dr. Garden, in the Philoſophical Tranſactions, has favoured the world with ſo very accurate and minute an account of this ſingular creature, that we are induced to lay it before our readers in his own words. The doctor's letter to a member of the Royal Society, which is dated at Charles Town in South Carolina, Auguſt 14, 1774, runs thus:

'A few days ſince I went to ſee ſome very curious fiſh, which were brought here about nine or ten weeks ago from Surinam; and I was both ſurprized and delighted to obſerve their ſtrange ſhape, and experience their wonderful properties. I had before received ſome vague account of ſuch a fiſh; but I always thought, that much of what I always heard was fabulous. There are five of theſe fiſhes now here, of different ſizes, from two feet in length to three feet eight inches. The following deſcription was made out from the longeſt and largeſt. It might have been much more accurate, if there had been a poſſibility of handling the fiſh, and examining it leiſurely; or if I could have had a dead ſpecimen, as many things relating to the internal and external ſtructure could in that caſe have been more exactly aſcertained. But this fiſh hath the amazing power of giving ſo ſudden and ſo violent a ſhock to any perſon that touches it, that there is, I think, an abſolute impoſſibility of ever examining, accurately, a living ſpecimen; and the perſon who owns them, rates them at too high a price (not leſs than fifty guineas for the ſmalleſt) for me to get a dead ſpecimen, unleſs one ſhould die by accident: if that ſhould happen, you may depend on having a more exact and accurate account for the Society.

'George Baker, mariner, who brought them here, intends to carry them to England; but as it is very uncertain whether they will arrive in health, and all alive, I have recommended to him to get a ſmall caſk of rum, with a large bung, into which he may put any of them that may die, and ſo prepare them for the inſpection and examination of the curious when he arrives.

'The largeſt of theſe fiſh was three feet eight inches in length, when extending itſelf moſt, and might have been from ten to fourteen inches in circumference about the thickeſt part of the body. The head is large, broad, flat, ſmooth, and impreſſed here and there with holes, as if perforated with a blunt needle, eſpecially towards the ſides, where they are more regularly ranged in a line on each ſide. The roſtrum is obtuſe and rounded. The upper and lower jaws are of an equal length, and the gape is large. The noſtrils are two on each ſide; the firſt large, tubular, and elevated above the ſurface; and the others ſmall, and level with the ſkin, placed immediately behind the verge of the roſtrum, at the diſtance of an inch aſunder. The eyes are ſmall, flattiſh, and of a blueiſh colour, placed about three-quarters of an inch behind the noſtrils, and towards the ſides of the head. The whole head ſeems to be well ſupported; but whether with bones or cartilages, I could not learn. The body is large, thick, and roundiſh, for a conſiderable diſtance from the head, and then gradually grows ſmaller, but at the ſame time deeper, or becomes of an acinaciform ſhape to the point of the tail, which is rather blunt. There are many light-coloured ſpots on the back and ſides of the belly, placed at conſiderable diſtances in irregular lines, but more numerous and diſtinct towards the tail. When the fiſh was ſwimming, it meaſured ſixteen inches in depth near the middle, from the upper part of the back to the lower edge of the fin, and it could not be more than two inches broad on the back at that place. The whole body, from about four inches below the head, ſeems to be clearly diſtinguiſhed into four different longitudinal parts or diviſions. The upper part, or back, is roundiſh, of a dark colour, and ſeparated from the other parts on each ſide by the lateral lines, which, taking their riſe at the baſe of the head, juſt above the pectoral fins, run down the ſides, gradually converging as the fiſh grows ſmaller, to the tail, and makes ſo viſible a depreſſion or furrow in their courſe, as to diſtinguiſh this from the ſecond part or diviſion, which may be properly called the body, or at leaſt appears to be the ſtrong muſcular part of the fiſh. This ſecond diviſion is of a lighter and more clear blueiſh colour than the upper or back part, and ſeems to

ſwell out ſomewhat on each ſide, from the depreſſion of the lateral lines; but towards the lower or under-part, is again contracted, or ſharpened into the third part, or carina. This carina, or keel, is very diſtinguiſhable from the other two diviſions by it's thinneſs, it's apparent laxneſs, and by the reticulated ſkin of a more grey and light colour, with which it is covered. When the animal ſwims gently in pretty deep water, the rhomboidal reticulations of the ſkin of this carina are very diſcernible; but when the water is ſhallow, or the depth of the carina is contracted, theſe reticulations appear like many irregular longitudinal plicæ. The carina begins about ſix or ſeven inches below the baſe of the head, and gradually widening or deepening as it goes along, reaches down to the tail, where it is thinneſt. It ſeems to be of a ſtrong muſcular nature. Where it firſt takes it's riſe from the body of the fiſh, it ſeems to be about one inch, or one inch and an half thick, and is gradually ſharpened to a thin edge, where the fourth and laſt part is ſituated, viz. a long, deep, ſoft, wavy fin, which takes it's riſe about three or four inches at moſt below the head, and runs down along the ſharp edge of the carina, to the extremity of the tail. Where it firſt riſes it is not deep, but gradually deepens or widens as it approaches the tail. It is of a very pliable, ſoft conſiſtence, and ſeems rather longer than the body. The ſituation of the anus in this fiſh is very ſingular, being placed underneath, and being about an inch more forward than the pectoral fins, and conſequently conſiderably nearer the roſtrum. It is a pretty long rima in appearance; but the aperture muſt be very ſmall, as the formed excrements are only about the ſize of the quill of a common dung-hill fowl. There are two pectoral (if I may call them ſo) fins, placed one on each ſide, juſt behind the head, over the foramina ſpiratoria, which are ſmall, and generally covered with a lax ſkin, ſituated in the axillæ of theſe fins. Theſe fins are ſmall for the ſize of the fiſh, being ſcarcely an inch in length, of a very thin, delicate conſiſtence, and orbicular ſhape. They ſeem to be chiefly uſeful in ſupporting and raiſing the head of the fiſh when he wants to breathe, which he does every four or five minutes, by raiſing his mouth out of the water: this ſhews that he has lungs, and is amphibious, and foramina ſpiratoria ſeem to indicate his having bronchiæ likewiſe; but this I only offer as a conjecture, not being certain of the fact. I muſt now mention the appearance of a number of ſmall croſs bands, annular diviſions, or rather rugæ of the ſkin of the body. They reach acroſs the body down to the baſe of the carina on each ſide; but thoſe that croſs the back ſeem to terminate at the lateral lines, where new rings take their riſe, not exactly in the ſame line, and run down the carina. This gives the fiſh ſomewhat of a worm-like appearance; and indeed it ſeems to have ſome of the properties of this tribe, for it has a power of lengthening or ſhortening it's body to a certain degree, for it's own conveniency, or agreeable to it's own inclination. I have ſeen this ſpecimen, which I have meaſured three feet eight inches, ſhorten himſelf to three feet two inches; but beſides this power of lengthening or ſhortening his body, he can ſwim forwards or backwards with apparently equal eaſe to himſelf; which is another property of the vermicular tribe. When he ſwims forwards, the undulation, or wavy motion of the fin and carina, begin from the upper part, and move downwards; but when he ſwims backwards, and the tail goes foremoſt, and the undulations of the fin begin at the extremity of the tail or fin, and proceed in ſucceſſion from that backwards to the upper part of the body; in either caſe he ſwims equally ſwift. Every now and then the fiſh lays himſelf on one ſide, as it were, to reſt himſelf, and then the four ſeveral diviſions of his body abovementioned are very diſtinctly ſeen, viz. the vermiform appearance of the two upper diviſions; the retiform appearance of the carina; and the laſt, or dark-coloured fin, whoſe rays ſeem to be exceedingly ſoft and flexible, and entirely at the command of the ſtrong muſcular carina. When he is taken out of the water, and laid on his belly, the carina and fin lie to one ſide, in the ſame manner as the ventral fin of the tertraodon does when he creeps on the ground. I have been the longer and more particular in the deſcription of the external ſtructure of this animal's body, becauſe I think, as it is of a moſt ſingular nature, and endowed with ſome amazing properties, even the moſt minute circumſtance I was able to obſerve relating to it, ſhould be mentioned.

'The perſon to whom theſe animals belong, calls them Electrical Fiſh; and indeed the power they have of giving an electrical ſhock to any perſon, or to any number of perſons who join hands together, the extreme perſon on each ſide touching the fiſh, is their moſt ſingular and aſtoniſhing property. All the five we have here are poſſeſſed of this power in a very great degree, and communicate the ſhock to one perſon, or to any number of perſons, either by the immediate touch of the fiſh with the hand, or by the mediation of any metalline rod. The keeper ſays, that when they were firſt caught, they could give a much ſtronger ſhock by a metalline conductor than they can do at preſent. The perſon who is to receive the ſhock, muſt take the fiſh with both hands, at ſome conſiderable diſtance aſunder, ſo as to form the communication, otherwiſe he will not receive it; at leaſt I never ſaw any one ſhocked from taking hold of it with one hand only; though ſome have aſſured me, that they were ſhocked by laying one hand on him. I myſelf have taken hold of the largeſt with one hand only, without ever receiving a ſhock; but I never touched it with both hands, at a little diſtance aſunder, without feeling a ſmart ſhock. I have often remarked, that when it is taken hold of with one hand, and the other hand is put into the water over it's body, without touching it, the perſon received a ſmart ſhock; and I have obſerved the ſame effect follow when a number joined hands, and the perſon at one extremity of the circle took hold of, or touched the fiſh, and the perſon at the other extremity put his hand into the water, over the body of the fiſh. The ſhock was communicated through the whole circle as ſmartly as if both the extreme perſons had touched the fiſh. In this it ſeems to differ widely from the torpedo, or elſe we are much miſinformed of the manner in which the benumbing effect of that fiſh is communicated. The ſhock which our Surinam fiſh gives, ſeems to be wholly electrical; and all the phænomena or properties of it exactly reſemble thoſe of the electric aura of our atmoſphere when collected, as far as they are diſcoverable from the ſeveral trials made on this fiſh. This ſtroke is communicated by the ſame conductors, and intercepted by the interpoſition of the ſame original electrics, or electrics per ſe, as they

uſed

uſed to be called. The keeper of theſe fiſh informs me, that he catched them in Surinam river, a great way up, beyond where the ſalt-water reaches; and they are a freſh-water fiſh only. He ſays that they are eaten, and by ſome people eſteemed a great delicacy. They live on fiſh, worms, or any animal food, if it is cut ſmall, ſo that they can ſwallow it. When ſmall-lived fiſhes are thrown into the water, they firſt give them a ſhock, which kills or ſtupifies them, that they may ſwallow them eaſily, and without any trouble. If one of theſe ſmall fiſhes, after it is ſhocked, and to all appearance dead, be taken out of the veſſel where the electrical fiſh is, and put into freſh water, it will ſoon revive again. If a larger fiſh than they can ſwallow be thrown into the water at a time that they are hungry, they give him ſome ſmart ſhocks, till he is apparently dead, and then try to ſwallow or ſuck him in; but after ſeveral attempts, finding he is too large, they quit him. Upon the moſt careful inſpection of ſuch fiſh, I could never ſee any mark of teeth, or the leaſt wound or ſcratch on them. When the electrical fiſh are hungry, they are pretty keen after their food; but they are ſoon ſatisfied, not being able to contain much at a time. An electrical fiſh of three feet and upwards in length cannot ſwallow a ſmall fiſh above two, or at moſt three inches and a half long. Since I wrote the above deſcription and remarks, I have had Mr. Bancroft's Eſſay on the Natural Hiſtory of Guiana put into my hands, in which I find an account of this animal; but as I think he has not been very particular in the deſcription of it, I reſolved ſtill to ſend you the above account, that you might judge for yourſelf. I obſerve, that his account or deſcription and mine differ in ſeveral things; and, amongſt others, where he ſays that thoſe fiſh were uſually about three feet in length; but the one, of which I have ſent a ſlight deſcription, was three feet eight inches. This ſmall variation might indeed have happened without any error; but I am told, that ſome of them have been ſeen in Surinam river upwards of twenty feet long, whoſe ſtroke or ſhock proved inſtant death to any perſon that unluckily received it.'

In addition to Dr. Garden's deſcription, we are enabled, by the curious diſſections of Mr. John Hunter, to declare, that the electrical qualities of this fiſh depend on particular organs. There are two pair of theſe organs, a larger and ſmaller, placed on each ſide of the fiſh, ſeparated from each other, and conſtituting, perhaps, more than a third part of the whole animal. In the ſtructure of the organs, there are flat partitions, or ſepta; and croſs diviſions between them, by means of thin plates, or membranes; of which tranſverſe plates about two hundred and forty are contained in a ſingle inch, which multiply the entire ſurface to a vaſt extent. The nerves of this fiſh, appropriated to the exerciſe of it's electrical powers, and which ariſe particularly from the medulla ſpinalis, whence they iſſue in pairs between all the vertebræ of the ſpine, and ſupply the organs, are conſiderably larger than thoſe which are beſtowed on any other part for the purpoſes of action and ſenſation. For a more minute account of the electrical properties of this fiſh, ſee TORPEDO.

GYRINUS. A name ſometimes given to a ſpecies of the mordella.

H.

HADDOCK; the Gadus Æglefinus of Linnæus. The generality of writers make the Haddock a ſpecies of the aſellus kind; but, according to the new Artedian ſyſtem, it is of the genus of gadi. Salvian calls it the aſellus major; and Turner and Willughby, the oros and aſinus of the ancients. Charlton tells us, that this fiſh was the caliaris, galeris, and galaxis, of Pliny; but this opinion does not ſeem to reſt on ſubſtantial evidence.

The Haddock ſeldom attains to any very conſiderable ſize, one of fourteeen pounds weight being very unuſual; and indeed it is generally eſteemed moſt proper for the table when it weighs only two or three pounds. The body is long and ſlender; the head ſlopes down to the noſe; the ſpace between the hind-part of the firſt dorſal fin is ridged; the chin is furniſhed with a ſmall beard; on the back there are three fins reſembling thoſe of the common cod-fiſh; and on each ſide beyond the gills there is a large black ſpot. Superſtition, always inclined to diſcover or invent, aſſigns this mark to the impreſſion St. Peter made with his finger and thumb when he took the tribute-money out of the mouth of this ſpecies; which impreſſion has deſcended to the whole race of Haddocks in confirmation of this miracle. The lateral line is black; the upper-part of the body is duſky, or brown; the belly, and the lower part of the ſides, are ſilvery; the irides are alſo ſilvery; the pupil is large and black; and the tail is bifid.

Haddocks begin to be in perfection about the middle of November, and continue ſo till the end of January; but, from that period till May, they become very flaccid, and out of ſeaſon. In May they begin to recover, and continue gradually improving till they arrive at their greateſt perfection.

Fiſhermen aſſert that, during ſtormy weather, Haddocks ſink to the bottom of the ſea, where they ſhelter themſelves in the ſand and ooze till the tempeſts have ſubſided; after which they are frequently caught with mud on their backs. In the ſummer ſeaſon they ſubſiſt on young herrings, and other ſmall fiſhes; and, in winter, they ſeek after the ſtone-coated worms, a ſpecies of the ſerpula which fiſhermen call Haddock-meat.

Vaſt ſhoals of Haddocks arrive periodically on the Yorkſhire coaſts; and ſo regular are they in their annual returns, that for two or three years ſucceſſively they have been obſerved to appear on the

the ſame day of the month. Theſe ſhoals ſometimes extend three miles in breadth; and, in length, from Flamborough Head to Tinmouth Caſtle, and perhaps much farther northward.

The following fact may convey ſome idea of their numbers: Three fiſhermen, within the diſtance of a mile from Scarborough harbour, frequently loaded their boat with them thrice a day, taking a tun of fiſh each time; but, when they ſunk their lines beyond the diſtance of three miles from the ſhore, they caught nothing but dog-fiſh, which purſuing the Haddocks as their prey, confine the ſhoal, like a barrier, within it's proper limits.

The large Haddocks quit the Yorkſhire coaſt as ſoon as they become out of ſeaſon, leaving behind them prodigious numbers of ſmall ones. On the approach of ſummer they retire to the ſhores of Jutland and Hamburgh, from whence they make their annual migrations to our coaſts.

HÆMATOPUS. A bird called by ſome authors the pica marina, or ſea-pye. In the Linnæan arrangement, this forms a diſtinct genus of birds of the order of grallæ; the diſtinguiſhing characters of which are theſe: the feet are formed for running; the toes are three in number on each foot; and the apex of the bill is compreſſed and cuneiform.

HÆMATOPUS ARDEA; the Red-legged Heron. A very beautiful Italian bird, called by the ancients cirris. It is one of the ſmalleſt ſpecies of the heron kind, and of a yellow cheſnut colour.

HÆMORRHUS. See BLOOD-SNAKE.

HAFFHERT. A bird deſcribed by Hoier, uſually ſeen at ſea, and ſuppoſed to be the forerunner of a ſtorm. It is ſhaped like the falcon, and grows to the ſize of the common hen. The beak, which is ſtrong and hooked, entirely reſembles that of the falcon, except that it is ſhorter. Fiſhermen and mariners dread the appearance of this bird; and, on diſcovering it, always make towards the ſhore with the utmoſt expedition.

HAG, MYXINE. A genus of worms; the characters of which are theſe: the body is ſlender and carinated beneath; the mouth is cirrated at the extremity; the two jaws are pinnated; and a rayleſs fin ſurrounds the tail and belly.

Theſe worms, which inhabit the ocean, perforate dead bodies, that they may with more facility fall to pieces. They ſometimes enter the mouths of fiſhes on the hooks, when ſuffered to remain long before they are drawn, and totally devour the whole, except the ſkin and bones; and they are alſo frequently found by fiſhermen in excavated fiſhes. Linnæus aſcribes to them the property of turning water into glue.

A ſpecies of this genus, about eight inches in length, is commonly caught near Scarborough; and has been diſtinguiſhed by the name of the Glutinous Hag.

HAII. A Brazilian appellation for the animal generally called the ſloth. This word ſeems to be pronounced by the creature itſelf, as it's common note; and from this circumſtance it is ſaid to have derived it's name.

HAKE; the Gadus Merlucius of Linnæus. This fiſh is found from one foot and a half to near twice that length. It's make is ſlender; it's back is of a pale aſh-colour; and it's belly is a dirty white: it's head is flat and broad; it's mouth is extremely wide; and it's teeth are very long and ſharp, particularly thoſe of the lower-jaw. The firſt dorſal fin is ſmall, conſiſting of nine rays; and the ſecond, which reaches from the baſe of the former almoſt to the tail, is compoſed of forty rays: the pectoral fins contain twelve rays, the ventral ſeven, and the anal thirty-nine.

The Hake is generally eſteemed a very coarſe fiſh; and, in modern times, has ſeldom been admitted to the table, either freſh or ſalted; in which laſt ſtate it is known by the name of Poor John.

Theſe fiſh are caught in great abundance on various parts of the Britiſh and Iriſh coaſts. Formerly there was a ſtationary fiſhery of Hake on the Nymph Bank, off the coaſt of Waterford; the firſt ſhoal arriving in June, during the mackarel ſeaſon; the other in September, at the commencement of the herring one. In this place it was not unuſual for ſix men to catch a thouſand Hake in one night, excluſive of other fiſhes; theſe were ſalted, and exported to Spain, particularly to Bilboa: but Smith, in his Hiſtory of the County of Waterford, publiſhed in 1746, laments that this fiſhery was on the decline from the defection of the ſhoals. Indeed, many of the gregarious kinds of fiſhes are apt to change their ſituations, and deſert their haunts, for a courſe of years; after which they return again. This irregularity may originate from ſeveral reaſons; but the moſt powerful ſeem to be a deficiency of the ſmaller fiſh, which ſerved them as food; and the numbers of predaceous animals which conſtantly harraſſed them in their migrations.

HAKE, FORKED; the Blennius Phycis of Linnæus. This ſpecies is generally about a foot long, and three inches deep; but, according to Dr. Borlaſe, ſome are caught upwards of eighteen inches in length. The head, as is common to the other ſpecies of this genus, ſlopes down to the noſe; the mouth is large; and, excluſive of the teeth in the jaws, a triangular congeries of ſmall teeth appears in the roof of the mouth. The firſt dorſal fin is triangular; the ſecond fin riſes exactly behind the firſt, and extends almoſt to the tail; the ventral fins, which are long, conſiſt only of two rays, united at the bottom, and ſeparated or bifurcated towards the end; the vent is placed in the middle of the body, the anal one extending from thence to the tail; the lateral line is incurvated; the tail is rounded; and the colour is a cinereous brown.

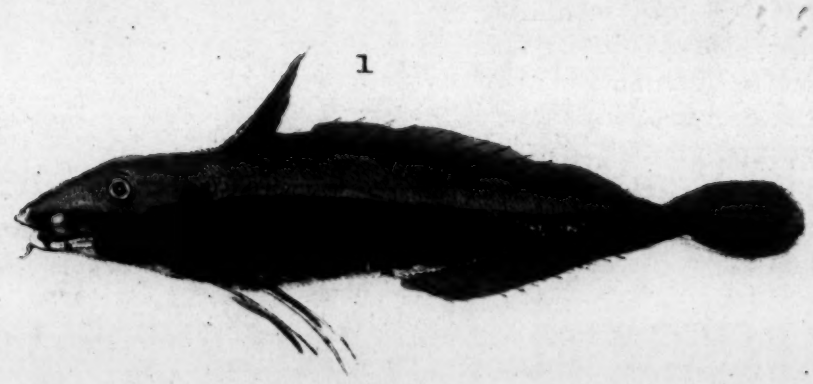
This fiſh, which is ſometimes caught on the coaſts of this iſland, but more commonly in the Mediterranean, is known in Cornwall by the name of the great-forked beard. Linnæus refers it to his genus of blenni; but Pennant ſeems to conſider this as an improper diſtribution, and arranges it with the gadi.

HAKE, LESSER. Mr. Jago firſt deſcribed this rare ſpecies, which few of our modern ichthyologiſts have had an opportunity of examining. It is ſaid to be about five inches long: it has a ſmall beard, a rounded tail, and bifurcated ventral fins; the colour is black, the ſkin ſmooth, and it's appearance rude and diſagreeable.

HALCYON. See KING'S FISHER.

HALECULA. An appellation given by ſome ichthyologiſts to the anchovy. The word is a diminutive of Halec, the claſſical name for the herring.

HALIÆTUS. A name given by ſome naturaliſts to the Aquila marina, Niſus, Oſſifraga, or Oſprey; the Falco Oſſifragus of Linnæus. This bird is very large, often weighing eleven pounds: the



1. FORKED HAKE. 2. ALPINE HARE. 3. VARYING HARE. 4. BLACK AND ORANGE-COLOURED INDIAN HAWK. 5. MARSH HAWK. 6. RING-TAILED HAWK.

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the head and neck are covered with long narrow feathers; the wings are of a plain chesnut colour; and the tail is principally black and white. The plumage of the body is whitish, brown, and rust-coloured, every distinct feather containing all these three colours; the legs are yellow, strong, thick, and feathered a very little way below the knees; and the claws, which are of a deep shining black hue, are strong, and extremely hooked.

This bird frequents Ireland, and several parts of Britain; and principally subsists on fish, which it seizes, when swimming near the surface of the water, by darting down on them.

HALIOTIS. An appellation sometimes given to the ear-shell. See Ear-Shell.

HARDER. A name given by some authors to a fish of the mullet kind; called by Marcgrave pastor piscis.

HARDY-SHREW. A term by which some naturalists express the mus araneus; usually called the Shrew, or the Shrew-mouse.

HARE. In the Linnæan distribution of nature, the Hare makes a distinct genus of animals of the order of glires. The characters are these: there are five toes on the fore-feet, and four on the hind; the ears are long; the tail is short; and there are two cutting-teeth in each jaw. Under this genus are comprehended all the different species of the Hare and rabbit kind.

Hare, Common. The Common Hare is one of the most timorous and persecuted of all animals. It is weak and defenceless, and therefore endued in a remarkable degree with the preserving passion of fear: this principle renders it perpetually attentive to every alarm, and keeps it continually in a lean state. In order to enable this creature to perceive the most distant approaches of danger, nature has provided it with very long ears, which, like tubes applied to the auditory organs of deaf persons, convey to it such sounds as are remote; and the motions of the Hare are directed accordingly. It has large prominent eyes placed backwards in it's head, in such a manner as to receive the rays of light on every side; so that, while it runs directly forward, it can almost see distinctly behind: it's eyes are never wholly closed; for the animal being perpetually on the watch, it even sleeps with them open. The muscles of it's body being strong, and without fat, it has therefore no superfluous burden of flesh to carry: and, to assist it in escaping from it's pursuers, the hinder legs are considerably longer than the fore, which adds to the swiftness of it's motions; and so very sensible is the Hare of this peculiar advantage, that, when started, it always makes towards the rising ground.

This creature being so well formed for a life of escape, it might reasonably be supposed to enjoy a state of tolerable security; but it's enemies are so very numerous, that it seldom lives the usual term prescribed to it by nature. Every species of the dog kind pursues it by instinct; the cat and the weasel tribes exercise all their little arts to ensnare it; and birds of prey, ants, snakes, and adders, drive it from it's form, particularly during the summer season. But man, as he is it's most powerful, so is he also it's most inveterate and destructive enemy: it is hunted by the sportsman, shot and snared by the poacher, and often finds it's most cruel adversary in the farmer whose lands it frequents. Persecuted thus on every side, did it not find a resource in it's amazing fertility, the whole race would long since have been exterminated.

The Hare being amazingly prolific, is capable of conception at the age of a few months: she goes with young but thirty days, and generally brings forth three or four at a time. Buffon, and some other naturalists, strongly assert the doctrine of superfetation, or conception on conception, in this animal; but, as Hares breed frequently in the space of one year, their vast numbers may be accounted for without acceding to an hypothesis which seems contrary to the ordinary course of nature.

The young of these animals are brought forth with their eyes open: their dams suckle them for twenty days; after which time they leave them, and begin to shift for themselves. Hence we may observe, that the education these creatures receive is but trifling, and their family connections but of short duration. With respect to the rapacious kinds, the dam continues to tutor her young for several months successively; teaches them the arts of rapine; and keeps them under her care till they are able to hunt for themselves. But a long connection of this kind would be quite unnecessary, as well as dangerous to the timid animals now under consideration: their food being procured with facility, their associations, instead of affording them protection, would only expose them to their pursuers. However, they seldom migrate far from the spot where they are produced, but each animal makes a form at a small distance; shewing a predilection rather for the place of their nativity than the society of their kind.

These animals repose in their forms in the daytime; and may be said to live only by night, when they go forth for the purposes of coupling and feeding. They do not however pair except at the rutting-season, which begins in February; and then the male pursues and discovers the female by the sagacity of his nose; and they are frequently observed by moon-light, playing about, skipping, and pursuing each other, in the most sportive manner; but the least motion, the slightest breeze, or even the falling of a leaf, is sufficient to disturb their revels; and they instantly fly off, each pursuing a separate track.

Hares live on roots, leaves, fruits, and corn; and prefer such plants as afford the most succulent repast. They also strip the bark from trees during the winter season, and feed almost indiscriminately on the spoils of every tree except the lime and the alder. When kept tame, they are subsisted on lettuce and other hortulane productions; but the flesh of such of them as have been thus brought up, is always destitute of that luxurious relish which distinguishes that of wild Hares.

The Hare seldom lives above seven or eight years at the utmost: it arrives at it's full perfection in one year; and this multiplied by seven, the ratio which the maturity of every creature bears to it's duration, gives the extent of it's life. It is said, however, that the females are longer-lived than the males; and some creditable authors confirm this circumstance, though Buffon seems to question it's authority. In our climate, these creatures pass a life of solitude and silence: they are seldom heard to cry, unless when either seized or wounded; and their voice is not so sharp as that of some other animals, but approaches more nearly to the squalling of an infant. They are far less wild than their habits and dispositions seem to indicate, being of a complying nature, and easily susceptible of some degree of education: they even become fond and caressing; but being incapable of attachment to any particular person, they will

ſtrive to regain their native liberty on the firſt opportunity. As they have excellent ears, and ſit on their hind-legs while uſing their fore-paws as hands, they have frequently been taught to beat the drum, to dance to muſic, and to perform ſome part of the manual exerciſe.

But the natural inſtincts of Hares for their preſervation are far more extraordinary than their artificial acquirements. They make themſelves forms particularly in ſuch places where the colour of the graſs ſeems moſt nearly allied to their own; which forms open to the ſouth in winter, and to the north in ſummer. The ſoles of their feet being furniſhed with hair, their motions are unattended with noiſe; and, if their ſtrength was equal to their ſwiftneſs, no other animals would be capable of overtaking them. But they generally exhauſt their powers at the firſt effort; and are much more eaſily caught than foxes, which are but ſlow creatures when compared to them.

When the Hare hears the hounds at a diſtance, it flies for ſome time from a natural impulſe, without managing it's ſtrength, or uſing any other means but celerity in order to it's preſervation. Having gained ſome hill or riſing ground, and left the dogs ſo far behind, that it's ears no longer receive their cries, it ſtops, rears on it's hinder legs, and looks back, for the purpoſe of ſatisfying itſelf whether it's purſuers are ſtill in ſight or not: but the dogs having once gained the ſcent, trace it with united and unerring ſkill; and the poor animal ſoon again receives indications of their approach. Sometimes, when hard hunted, it will ſtart a freſh Hare, and ſquat in the ſame form; at others, it will creep under the door of a ſheep-cot, and conceal itſelf among the ſheep; ſometimes it will enter a hole, like the rabbit; at others, it will run up one ſide of a quickſet hedge, and down the other; and it has even been known, when opportunity ſerved, to aſcend the top of a cut hedge, and run a conſiderable way, by which ſtratagem it has effectually evaded the hounds. It is alſo not unuſual for the Hare to betake itſelf to furze-buſhes, and leap from one to another, whereby the dogs are frequently miſled. However, the firſt doubling which a Hare makes generally affords a key to all it's future attempts of that kind, the latter exactly reſembling the former.

Young Hares leave a ſtronger ſcent behind them than old ones, becauſe they tread heavier in conſequence of the weakneſs of their limbs; and the more fatigued theſe harmleſs, perſecuted animals, become, the ſtronger ſcent they leave behind them. The males are diſtinguiſhable by their preferring hard highways, feeding at a greater diſtance from ſome cover, and by making their doublings of greater compaſs than the females. The male, after having taken a turn or two round his form, frequently leads the hounds five or ſix miles on a ſtretch; but the female keeps cloſe by ſome cover ſide; turns, croſſes, and winds among the buſhes, like the rabbit; and ſeldom runs directly forward. In general, however, both the male and female vary their artifices according to the weather: in a moiſt day, they keep cloſe to the highway, if within their reach, becauſe their ſcent is then ſtrongeſt on the graſs. If they approach the ſide of a grove or ſpring, they forbear to enter, but ſquat down till the hounds have overſhot them; and then turning along their former track, make to their old form, in hopes of there finding ſhelter and ſafety.

The influence of climate is very perceptible on theſe animals, and indeed on moſt others. In thoſe countries which border on the north pole, they become white in winter, and aſſemble in troops of four or five hundred. The Hares of hot countries, particularly of Italy, Spain, and Barbary, are ſmaller than thoſe of Britain; but ſuch as are bred in the Milaneſe are ſaid to be the beſt in Europe. From the torrid zone to the vicinity of the polar circle, there is ſcarcely a country where theſe creatures are not found: they inhabit every part of Europe; and moſt countries of Aſia, Africa, and America.

The fur of Hares is of vaſt importance in the hat manufactory; and many thouſands of their ſkins are annually imported into this kingdom from Ruſſia and Siberia. The fleſh of theſe animals has been eſteemed a delicacy by ſome nations, and utterly deteſted among others. The ancient Britons, Jews, and Mahometans, all regarded the Hare as an unclean creature, and religiouſly abſtained from taſting it's fleſh: on the contrary, there are ſcarcely any other people, however barbarous, who at preſent do not conſider it as the moſt agreeable food. Faſhion ſeems ſo to govern all the ſenſes, that what mankind at one time conſider as beautiful, fragrant, or ſavoury, is at another period, or in another country, regarded as deformed, diſguſtful, and nauſeous. The ſame fleſh, which the ancient Romans ſo much admired, as to call it the Food of the Wiſe, was deemed unfit to be eaten by the Jews and Druids; and even the moderns, who unite in ranking the fleſh of this animal among the delicacies of the table, have nevertheleſs very different ideas with reſpect to the art of dreſſing it.

Hare, Varying; the Lepus Variabilis of Pallas. This ſpecies, which inhabits Norway, Lapland, Ruſſia, Siberia, Kamtſchatka, and Hudſon's Bay, is alſo found on the tops of the higheſt hills in Scotland; but never deſcends into the vales, or aſſociates with the common Hare. It generally ſhelters itſelf in the cliffs of rocks, is eaſily tamed, and becomes extremely playful and amuſing. Towards the month of September it changes it's colour, and reſumes it's ſummer dreſs about April; but it is only in the extremely gelid regions of Greenland where it always remains perfectly white. In Siberia it aſſumes the colour of ſnow during the winter, not only in a ſtate of liberty, but alſo when tamed, and kept in the ſtove-warmed apartments of the natives, as has been proved by experiments. In the laſt-mentioned country, theſe animals aſſemble in troops of five or ſix hundred, migrating in the ſpring, and returning in autumn: to this they are compelled by the want of ſubſiſtence; the lofty hills being in the brumal ſeaſon deſtitute of vegetables for their ſupport, they deſcend to the plains, and exchange their ſafe and beloved retreats in the mountains for ſituations which, though they afford plenty of food, teem with danger.

The Varying Hare is ſmaller than the common ſpecies. In the ſummer ſeaſon it's fur is of a light grey colour, with a ſlight admixture of black and tawny; it's tail is always white; it's ears are ſhort; it's legs are ſlender; and it's feet are cloſely and warmly furred. In winter, the whole of the animal changes to a ſnowy whiteneſs, except the tips and edges of it's ears, which remain black.

In the ſouthern and weſtern provinces of Ruſſia there is a mixed breed of Hares, between this and the common ſpecies, which ſuſtains only a partial

loſs

loſs of it's colours; the ſides, and the more expoſed parts of the ears and legs, becoming white in the ſeverer months, while the other parts remain unchanged. This variety is by the Ruſſians called Ruſſak: and prodigious numbers are taken in ſnares for the ſake of their ſkins only; the Ruſſians and Tartars, like the ancient Britons, holding the fleſh of Hares in the utmoſt deteſtation.

Hare, Cape; the Lepus Capinſis of Linnæus. This ſpecies, which inhabits the interior parts of the country near the Cape of Good Hope, frequents the moſt rocky and mountainous ſituations, and takes up it's abode in the fiſſures of the cliffs. The ears are long, and dilated in the middle; the outſides being naked and roſe-coloured, and the inſides and edges covered with ſhort grey hairs. The crown and back are duſky, mixed with tawny; the cheeks and ſides are cinereous; the breaſt, belly, and legs, are ruſt-coloured; and the tail, which is buſhy, turns upwards. This animal is about the ſize of the rabbit.

Hare, Brazilian. The Brazilian Hare frequents woods, but never burrows; it is extremely prolific; and it's fleſh is highly eſteemed. It's ears, which are very large, reſemble thoſe of the common kind; it's face is of a reddiſh hue; it's chin is white; a white ring encircles it's neck; it's body is entirely covered with a dark cinereous fur; it's belly is whitiſh; and it has not even the very rudiments of a tail.

Hare, Alpine. This animal has ſhort rounded ears, a long head, very long whiſkers, and two very long hairs over each eye. The tip of the fur is white, the middle being of a bright ferruginous hue, and the baſe duſky; but it is ſo intermixed with long duſky hairs, that at firſt ſight the whole appears of a bright bay colour.

Theſe Hares, which are about nine inches long, inhabit the ſnowy mountains of the Altaic Chain, extending to the Lake Baikal, and from thence to Kamtſchatka: and they are alſo ſaid to be natives of the Alentian or Fox Iſlands, in the New Northern Archipelago. They ſometimes burrow between rocks, but oftener lodge in their fiſſures. In cloudy weather, they aſſemble together, and lie on the rocks; but, at other times, they are found in pairs, or more, according to conveniency. Their cry, which is ſhrill, reſembles the chirping of ſparrows. On the ſmalleſt alarm, they run into their holes, and are therefore ſhot with much difficulty.

By a providential inſtinct, theſe creatures guard againſt the rigours of their hyperborean retreats. Towards autumn, parties of them collect together vaſt quantities of the choiceſt herbs and graſſes perfectly dried, which they place beneath the ſhelter of ſome impending rocks, between the chaſms, or round the trunks of trees. In many parts, theſe herbs appear ſcattered, as if with an intention of drying them properly. The heaps, which are of various ſizes, according to the number of animals employed in forming them, are ſometimes ſix feet in height, and as many in diameter at their baſes; but their uſual dimenſions are about three feet each way. Theſe ricks are often the origin of fertility among the rocks; for their reliques, mixed with the dung of the animals, rot in the barren chaſms, and form a ſoil productive of various herbs and roots.

The ſable-hunters frequently derive the moſt ſubſtantial advantages from the labours of the Alpine Hares: for, being obliged to traverſe deſarts and mountains at conſiderable diſtances from thoſe places where ſubſiſtence for men or horſes is to be found, their cattle would often periſh through want, did not the ricks of theſe little provident animals help to ſupport them; which are eaſily diſcovered by their height and form, even when totally covered with ſnow. For this reaſon the Alpine Hare has a name among every Siberian and Tartarian nation where it is found: a circumſtance which marks it's importance to ſociety; for few animals, ſo diminutive in their ſize, are noticed in thoſe regions, unleſs poſſeſſed of ſome valuable or attractive qualities.

Hare, Ogotona. This animal, which was firſt noticed by Dr. Pallas, is only ſix inches long; and the weight of the male does not exceed ſeven ounces. It has oblong oval ears, a little pointed; it's hair is long and ſmooth; that of it's body is brown at the roots, light grey in the middle, and white at the tip, intermixed with a few duſky hairs; it's belly is white; the outſides of it's legs are yellowiſh; and it's noſe is marked with a yellow ſpot; which colour likewiſe covers the ſpace about it's rump.

This ſpecies, which inhabits the vaſt deſart of Mongolia, and the frontiers of China towards Tartary, lives in the open vallies, and on rocky, barren mountains. The Mongolian Tartars call it Ogotona. It ſometimes burrows like the rabbit, and at the bottom of it's hole forms a neſt of ſoft graſs.

Theſe animals, which wander abroad principally in the night-time, feed in the vallies on the tender bark of a ſort of ſervice, and the dwarf-elm; and likewiſe on various vegetables. Before the approach of winter, they collect large quantities of herbs, with which they fill their holes; and, directed by the ſame inſtinct as the Alpine Hares, they alſo form hemiſpherical ricks of hay, each about one foot high, for their ſupport during the ſeverity of the weather. Hawks, magpies, and owls, indiſcriminately prey on them; but their moſt formidable enemies are the fitchet, the ermine, and the cat.

Hare, Calling; the Lepus Puſillus of Pallas. This curious ſpecies is only about ſix inches in length, and ſeldom exceeds four ounces in weight. The head is long, and covered with fur to the very tip of the noſe; the ears are large and rounded; and the legs are very ſhort. The whole body is covered with very ſoft, long, ſmooth fur, of a browniſh lead-colour; and, towards the ends, of light grey, tipt with black.

Theſe creatures, which inhabit the ſouth-eaſt parts of Ruſſia, delight in ſunny vallies and fertile hills, eſpecially near the margins of woods, into which they can run for ſhelter on any emergency. Indeed, they are ſo very timid in their natures, and concealed in their way of life, as rarely to be ſeen, except ſuch as have fallen into ſnares laid for ermines. About the Volga they are called Semlanoi Saetſhik, or Ground-Hares: the Tartars give them a name, which, in their language, ſignifies the Barking-mouſe, on account of their cry; and the Kalmucs call them Ruſla.

The Calling-Hares burrow in the earth; forming long galleries, at the ends of which they make their neſts: and ſo numerous and intricate are the avenues which lead to their retreats, that they would with great difficulty be diſcovered, did not their voice betray them. This voice reſembles the piping of a quail, but is ſo loud, that it may be heard at the diſtance of half a German mile; and they

they reiterate it, by juſt intervals, at night and morning, but ſeldom in the day-time.

The female brings forth ſix young at a time, blind, and deſtitute of hair: ſhe ſuckles them often; and carefully covers them with the materials of her neſt.

Theſe creatures are extremely harmleſs and inoffenſive, and eaſily tamed.

HARE, AMERICAN. This animal is eighteen inches long; and ſometimes weighs upwards of four pounds. The ears are tipt with grey; the upper part of the tail is black, and the lower white; the neck and body are mixed with cinereous, ruſt-colour, and black; the belly is white; and the legs are a pale ferruginous.

This ſpecies inhabits all parts of North America. In the ſouthern provinces of the United States, it retains it's colours through every ſeaſon of the year without variation; but, in New England, Canada, and Hudſon's Bay, it changes it's ſhort ſummer fur, at the approach of winter, for one very long, ſilky, and ſilvery; the edges of the ears only preſerving their colour. At this ſeaſon it is in the higheſt perfection for the table; and affords many excellent repaſts to thoſe who winter in that inhoſpitable climate.

Theſe Hares breed twice a year, and produce from five to ſeven at a time. They lodge under fallen timber, and in hollow trees; and in ſpring ſhelter their young in the woods, to which, when purſued, they run for protection. They never burrow nor migrate, but always frequent the ſame places.

HARE, JAVA, or SUMATRA; the Mus Leporinus of Linnæus. This animal poſſeſſes the ſame general characters with the Guinea-pig kind: it's head is ſmall and ſlender; it's ears are prominent, naked, and round; the upper part of it's body is of a reddiſh colour; the breaſt and belly are white; the legs are long; the fore-feet are furniſhed with four toes, the hind with three; and the tail is ſhort. This creature is equal in ſize to the Common Hare.

HARENGIFORMES. A genus of fiſhes, approaching to the herring in ſhape: the principal character of which is, that a ſerrated line, compoſed of two ſcales, runs along the bottom of the belly; to which may be added, that the ſides and belly are of a bright ſilver colour; and that the ſcales are large and looſe.

HARENGUS. See HERRING.

HARLEQUIN DOG. A ſpecies of Dog not very diſſimilar to the ſmall Daniſh Dog, except that it is longer, and generally of a black and white colour: however, there are ſome white and cinnamon, and others mottled with various colours.

HARP-SHELL. An appellation given to a ſpecies of dolium. See DOLIUM, and LYRA.

HARRIER. A well-known kind of dog, remarkable for his ſagacity in tracing, and boldneſs in purſuing his game. There are ſeveral varieties, but all differing in their ſervices; ſome being adapted for the purſuit of one ſort of game, and ſome for another. See DOG.

HART. A ſtag, or male deer, which has compleated his fifth year. If the king or queen hunt him, and he eſcape, he is called a Royal Hart: if, in conſequence of ſuch hunting, he is driven out of the foreſt, proclamation is uſually made in the adjacent places, that, from a regard to the entertainment the animal has afforded the ſovereign no perſon is to hunt him, or prevent his returning to his former cover; on which he has uſually been called a Hart Royal Proclaimed. See DEER.

HARVEST-FLY; Cicada. The name of a large Fly, remarkable for the noiſe which it makes during the ſummer months, and particularly about the time of harveſt. Authors in general have tranſlated Cicada by the Engliſh word Graſhopper; but this is extremely erroneous, the Cicada being a very different creature from the graſhopper. In France, where it is very common, it is called the Cigale. Italy, and all the warm climates of Europe, abound with it; and, in almoſt every country where it is found, the vulgar give it a name expreſſing the Harveſt-Fly; but in England this inſect is wholly unknown. It is probable, therefore, that our authors, who, according to the deſcription of the ancients, found the Cicada very noiſy, fancied the graſhopper muſt be the ſame creature, this being the moſt querulous of all Engliſh inſects in the ſummer ſeaſon.

The Cicada is furniſhed with four wings; and it's body is ſhort and thick. The great, or common Cicada, is by far the largeſt of any known ſpecies of ſhort-bodied flies; and even the ſmaller kinds are larger than the hornet.

To the two ſpecies of Cicadæ mentioned by Ariſtotle and the other ancient writers, Reaumur has added a third, of the middle ſize between the achetæ and the tettigoniæ of antiquity, the greater and leſſer Cicadæ of the moderns.

Theſe three ſpecies differ not only in magnitude, but alſo in colour. The large kind is of a deep black brown hue, with a ſmall admixture of yellow on the breaſt, and on ſome of the rings of the body: the middle-ſized kind, firſt noticed by Reaumur, is of a paler brown colour, and contains more yellow; but is more particularly diſtinguiſhed by two croſs lines of yellow, which bear ſome reſemblance to the Roman X: and the third kind, the ſmalleſt of all, is of a reddiſh colour with a conſiderable quantity of yellow. Theſe are the diſtinctions of Reaumur; who, with a candour that does him honour, acknowledges, that he had not ſuch favourable opportunities as he could have wiſhed of examining the Cicadæ of different countries; and is of opinion, that future naturaliſts will increaſe the catalogue of ſpecies.

It has been generally ſuppoſed, that the noiſe which the Harveſt-Fly, or the Cicada, makes, is occaſioned by a ſwift motion of the wings, and their friction againſt the breaſt; together with the grating of the under pair of wings in their paſſage againſt the upper ones. Were this the real caſe, it would be difficult to aſſign a reaſon why the female Cicada ſhould not emit the ſame ſound as the male, ſince ſhe is furniſhed with exactly the ſame organs for ſinging: but, in fact, the matter is far otherwiſe; and the bare inſpection of the body of the male Cicada will prove, that the noiſe muſt originate from other cauſes than have commonly been believed. If with metaphyſical preciſion we only allow that to be a voice, which is an articulation of the air, thrown from the lungs in it's paſſage through the larynx, and other correſponding parts, then indeed the Cicada has properly no voice; but if we extend the meaning of the term, and include the ſeveral ſounds made by inſects with other organs, yet intelligible to their fellow inſects, we muſt allow the Cicada has a voice, and in reality a ſtrong one, the organs of which are not in the lungs and throat, but in the belly, as has been fully proved by Reaumur in his

his Hiſtory of Inſects. By the admirable reſearches of this ingenious naturaliſt, it appears, that though the female Cicada is deſtitute of the organs of ſound which are found in the male, ſhe has nevertheleſs an inſtrument of peculiar ſervice for lodging her eggs in ſafety, with which the other ſex is not ſupplied. That the eggs of the Cicada may ſucceed properly in hatching, it is neceſſary that they ſhould be lodged in the ſubſtance of the wood; and for this purpoſe the inſtrument of the female is peculiarly adapted. Indeed, moſt other inſects which depoſit their eggs in wood, prefer the young branches and ſhoots of trees and ſhrubs in a ſtate of vegetation, where the eggs receive nouriſhment from the circulating juices: the Cicada, on the contrary, aware that her eggs only want a proper lodgment, always lays them in dry or rotten ſticks. She ſeizes whatever kind of wood ſhe meets with anſwering this deſcription; and, making a row of perforations, puts an egg into each.

Leaving their firſt exuviæ in the neſt, the young inſects quit their holes; and immediately dropping on the ground, make their way into it, and remain buried for ſome time in the form of hexapode worms. Having continued a ſhort ſpace in thoſe ſubterraneous retreats, they become transformed into a ſort of nymphs, endowed with a locomotive power, though they have not attained to their perfect growth. Theſe creatures remain in the nymph ſtate two years; and, at the approach of their final transformation into the fly-ſtate, they quit the earth, crawl up the bodies of trees, and faſtening themſelves to the branches, paſs through the various changes allotted to the inſect tribe before they arrive at a ſtate of perfection; after which they become denizens of the ſky.

In hot climates, theſe inſects are extremely diſagreeable, on account of their diſcordant, grating noiſe. The ancients, indeed, revenged themſelves by eating them, and accounted them an excellent diſh in all their ſtates; but were particularly fond of the nymph, or tetty-gometra. They alſo preferred the females, when they were full of eggs; and the males, before they had performed the buſineſs of impregnation, becauſe of the quantity of ſemen they contained.

HASELA. A freſh-water fiſh of the malacoſtomous or leather-mouthed kind; by ſome reputed a ſpecies of the mullet; and, by others, of the chubb. It is a ſmooth, ſoft, and ſmall fiſh, having an oblong and ſlender body; and ſeldom exceeds ſix inches in length. It is in the higheſt perfection during the months of April and May; and is caught both in lakes and rivers.

HAVELDA. An appellation given to a bird of the duck kind common in Iceland. It is the anas caudata Iſlandica of naturaliſts, or the long-tailed Iceland duck.

HAUSTELLUM. A name ſometimes uſed to expreſs a peculiar kind of ſhell-fiſh of the genus of purpura; called in French the becaſſe; and in Engliſh, the woodcock-ſhell. It's beak is remarkably long and ſlender. There are ſeveral ſpecies, ſome of them extremely elegant.

HAUTIN. A provincial appellation for the fiſh called alſo the outin, and known among naturaliſts by the name of the oxyrinchus.

HAWFINCH; the Loxia Coccothrauſtes of Linnæus. An Engliſh name for the groſbeak, called frizone by the Italians. See GROSSBEAK.

HAWK. A predaceous bird of a bold and generous nature, of which there are ſeveral ſpecies. In the Linnæan diſtribution, the Hawk gives name to a whole order of birds, diſtinguiſhed by a hooked beak projecting on both ſides from the upper mandible; and comprehends four genera, the vulture, the falcon, the owl, and the butcher-bird.

Naturaliſts are far from being unanimous with reſpect to the number and diviſion of the Hawk kind. However, the moſt commodious diſtribution is into the long and ſhort-winged kinds: the former includes the falcon tribe, properly ſo called; and the latter the Hawks, ſuch as the Sparrow-Hawk and the Gos-Hawk.

HAWK, RING-TAILED. This ſpecies, which is a native of Hudſon's Bay, was firſt deſcribed by the ingenious Edwards. It is about the ſize of the common crow; the bill is of a dark horn-colour, and hooked, as in other Hawks; and the cere is yellow, and thinly beſet with black ſtiff feathers, which alſo ſurround the angles of the mouth. The head is duſky or blackiſh, with a ſmall admixture of white on the forehead near the bill; the hinder part of the head, and the fore-part of the neck, are clay-coloured mottled with duſky brown; the upper part of the neck, the back, and the wings, are duſky brown; but the edges of ſome of the middle quills are cinereous. The inner coverts are ſprinkled with ſmall brown ſpots; and the inner webs of the quills are tranſverſely barred with faint, narrow, duſky lines. The rump and the covert-feathers of the tail are white, which uniting with the white feathers beneath the tail, form a white ring; the middle feathers of the tail are duſky, and the next on each ſide of a blueiſh aſh-colour; but the exterior are white; and all of them are marked with eight duſky lines. The belly, breaſt, thighs, and coverts under the tail, are white, with reddiſh brown ſpots tranſverſely waved on the breaſt and thighs, in the form of hearts on the beginning of the belly, and of creſcents on the lower belly and the coverts under the tail. The legs and feet are of a gold colour; the exterior toe is joined to the middlemoſt by a membrane; and the claws are black.

HAWK, INDIAN, BLACK AND ORANGE-COLOURED. This bird, which is a native of the Brazils, is ſmall-ſized, but extremely ſtrong in it's make: the bill is perfectly aquiline; the thighs are brawny; the legs are thick and ſhort; and the toes are armed with very ſharp and ſtrong talons; ſo that it may with propriety be called the Little Eagle. The bill is aſh-coloured, and covered at the baſe with a yellow ſkin; the eyes are ſurrounded with yellow ſpaces, encircled with black feathers, which terminate in lines of the ſame colour drawn down each ſide of the head and neck; and theſe black lines are again encompaſſed with white, extending to the baſe of the bill. The top of the head, the upper ſide of the neck, the back, and the upper ſides of the wings and tail, are black, ſhining with a blue and purpliſh gloſs; the ſides of the wings are alſo black; the covert-feathers withinſide the wings are white; and the inner webs of the greater wing-feathers, and thoſe of the tail, are tranſverſely barred with white and black. The under-ſide of the bird, from the bill to the tail, is of a bright orange-colour; the legs and feet are of a bright gold-colour; and the claws are black.

HAWK, MARSH. This bird is very large; it's wings, when extended, meaſuring three feet and a half from tip to tip; and from the extremity of the bill to the end of the tail it is two feet long. The bill is of a blueiſh colour; at the baſis of the up-

per mandible there is an orange-coloured ſkin, in which the noſtrils are placed; the eyes are alſo encircled with an orange-coloured ſkin; the irides are hazel-coloured; and round the noſtrils and the angles of the mouth there are ſome black hairs or briſtles. A black line paſſes from the bill through the eye; and from the noſtrils proceed white lines juſt above the eyes, which bending down the ſides of the head, unite under the throat; there is alſo a white mark under each eye: the reſt of the head, the neck, and the breaſt, are of a duſky brown colour, with a ſmall admixture of white on the top of the head; the back, wings, and tail, are a duſky brown, except that the latter has four tranſverſe bars of a blackiſh colour; and the rump and covert-feathers on the upper ſide of the tail are white. Part of the breaſt, the belly, thighs, and the covert-feathers under the tail, are a reddiſh yellow; the legs and feet are covered with orange-coloured ſcales; and the claws are black.

The Marſh Hawk is a native of Pennſylvania. It frequents the marſhes in the ſummer ſeaſon, preying on ſmall birds, frogs, ſnakes, and lizards; but it migrates towards the approach of winter.

Hawk, Indian Brown. This bird is about fourteen inches long: the bill is blueiſh with a black tip; the irides are yellow; the head, back, and rump, are brown; the coverts of the wings are brown bordered with white; and the quill-feathers are duſky, edged with light brown. The fore-part of the neck, the breaſt, and the belly, are white, marked with numerous yellow lines of a ſemicircular figure; the tail is a pale brown, tranſverſely marked with four duſky lines; and the legs are of a very faint yellow hue.

HAY. An animal of the monkey kind, about the ſize of the ſpaniel-dog; having a face nearly reſembling the human, and a belly depending, like that of a ſow with young. The hair is greyiſh; the tail is very ſhort; and the legs are hairy, and furniſhed with long claws. This creature is naturally very wild, active, and playful; but, when taken and confined, it ſoon becomes mild and tractable.

HAY-WORM. A particular ſpecies of Worm found among hay, with whoſe origin and changes we are as yet but imperfectly acquainted. It is about half an inch long, and of a whitiſh colour ſhaded with faint ſtripes of a yellowiſh brown. It has fourteen feet; and poſſeſſes other evident marks of it's being a real caterpillar.

HAZLE-HEN. A bird of the gallinaceous kind, common in the German woods, and ſuppoſed by many naturaliſts to be the attagen of the ancients. It is about the ſize of a ſmall pullet; it's belly is white; it's breaſt is white, variegated with black; it's throat is reddiſh; and below the beak of the male there are ſome black feathers, by which it may be diſtinguiſhed from the female. The head, which is of a greyiſh brown colour, has on each ſide of it a white line; the back and rump are prettily variegated like thoſe of the partridge; the ſides are of a yellowiſh or reddiſh brown hue intermixed with white; the wings and tail are variegated with black, brown, and white; but the latter has alſo an admixture of red. This bird feeds on vegetables; and it's fleſh is much eſteemed.

HEART-SHELL. A genus of ſhells by ſome authors referred to the pectunculus, or cockle kind; but by more modern writers juſtly made a genus of itſelf. The diſtinguiſhing characters are theſe: the ſhell is bivalve, of a globoſe elated form, deeply ſulcated, in ſome ſpecies imbricated, in others prickly, but never auriculated; and always bearing a general reſemblance to the figure of a heart.

This genus contains ſeveral very remarkable ſpecies; one of the moſt elegant of which is the imbricated Heart-Shell, called by French conchologiſts Faitage, or Roof-Shell, from it's reſembling the rafters of a houſe; another ſpecies is denominated the Cabbage-Shell, from it's undulations, which reſemble the garden curled cabbages; and to this genus alſo belongs the Noah's Ark Shell.

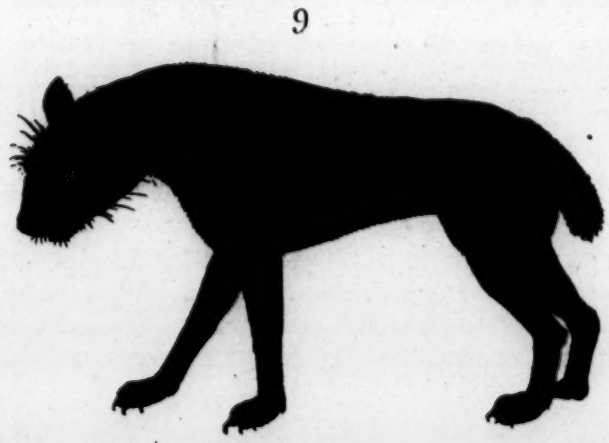
HEATH-COCK. An appellation given by many authors to the common grous. See Grous.

Heath-Cock, Ruffed. This very curious bird, which was firſt figured and deſcribed by Edwards, is nearly of a middle ſize between the pheaſant and the partridge: the bill is like that of the hen, of a browniſh horn-colour; the feathers bend forwards to the noſtrils, which they cover; thoſe on the crown of the head are pretty long, and Edwards ſuppoſes that the bird can erect them like a creſt at pleaſure. The plumage on the neck, which is long, may be either raiſed in the form of a ruff, or permitted to lie flat, according to the fancy of the fowl; the head, neck, back, wings, and tail, are beautifully variegated with dark and light brown, together with a ſmall admixture of black; the end of the tail is cinereous, and within that there is a broad tranſverſe black bar; the under-ſide of the tail is marked and coloured like the upper, except that the ſhades are fainter; the inner covert-feathers of the wings are light brown and white, but their inſides are cinereous; the plumage between the back and the wings is orange and black, with white tips; the throat is a bright brown inclining to orange; the breaſt, belly, and thighs, are white, with a faint tincture of orange and black ſemilunar ſpots on the breaſt and ſides; and the legs are covered down to the feet with white filiform feathers.

This bird ſpreads it's tail like the turkey-cock, and walks with a very ſtately formal pace, making a noiſe ſomewhat like that of the turkey. But it is principally remarkable for the thumping noiſe it makes with it's wings: it will ſometimes ſtand on an old fallen tree, and beginning the ſtrokes very gradually, will repeat them quicker and quicker till they reſemble diſtant thunder, which continues about a minute; and then, after an interval of ſix or ſeven minutes, it will renew them. This ſound, which may be heard at the diſtance of half a mile, gives ſufficient intimation to fowlers of the place of it's retreat. It exerciſes this thumping, during the ſpring and autumn, about ten in the morning and four in the afternoon. It feeds principally on berries and ſeeds. The female hatches twelve or fourteen eggs at a brood; and protects her young till the ſucceeding ſpring.

The Ruffed Heath-Cock is moſt commonly found in the United States of America, and is there called a pheaſant. It ſhews a peculiar predilection for a kind of ivy-berry, which is deleterious to ſeveral other animals. Dr. Brooke of Maryland obſerves, that it thumps chiefly during the ſpring, when it's breaſt ſwells like that of the pouting pigeon. Lahontan likewiſe confirms the account of the thumping of this bird in the following words: 'I went in company,' ſays he, 'with ſome Canadeſe, on purpoſe to ſee that fowl flap with it's wings: believe me, this ſight is one of the greateſt curioſities in the world; for it's

flapping



1. BLACK AND SPOTTED HEATH COCK. 2. RUFFED HEATH COCK. 3 HEDGE HOG. 4 HELMET SHELL.
5. COMMON HERON. 6. NORTH AMERICAN ASH-COLOURED HERON. 7. HOOPOE. 8. HORNED FISH. 9. HYÆNA.

Plate LVII. Published as the Act directs, by Harrison & Co. Nov.r 19.th 1785.

flapping makes a noiſe much like a drum for about the ſpace of a minute; then the noiſe ceaſes for half a quarter of an hour, after which it begins again. By this noiſe we were directed to the place where the unfortunate bird ſat, and found it on a rotten moſſy tree. By flapping one wing againſt the other, it means to call it's mate; and the humming noiſe which enſues thereon may be heard half a quarter of a league.'

HEATH-COCK, BLACK AND SPOTTED. This ſpecies is a native of Hudſon's Bay. It is larger than the partridge, but ſmaller than the pheaſant. The bill is like that of the hen, of a dark lead-colour; the noſtrils are covered with black feathers; the fore-part and under-ſide of the head are black; and between the angles of the mouth and the eyes there is a white ſpot, and another behind the eyes. White lines proceed from the corners of the mouth; and, paſſing under the eyes, tend downwards, and unite under the throat. The top of the head, the neck, back, and coverts of the tail, are variegated with black and duſky brown; as are alſo the covert-feathers of the wings: the quills of the wings are duſky, edged with brown; and the tail-feathers are black, tipt with orange. The breaſt and belly are black; the lower belly and thighs are black, mottled with brown and white; the legs are covered down to the feet with ſlender brown feathers, tranſverſely waved with black lines; and the hinder toe is hid in the feathers.

HEATOTOLT. An American bird, deſcribed by Nieremberg, and called by ſome authors avis venti. It is remarkable on account of a very large and round creſt of whitiſh feathers on it's head; it's breaſt is of a browniſh grey colour; it's belly is white; and it's feet are yellow: it's tail, when expanded, is round, variegated with black and white; and it's back and wings are black.

HEDGE-HOG. A genus of animals having five toes on each foot, and the body covered with ſtrong ſhort ſpines.

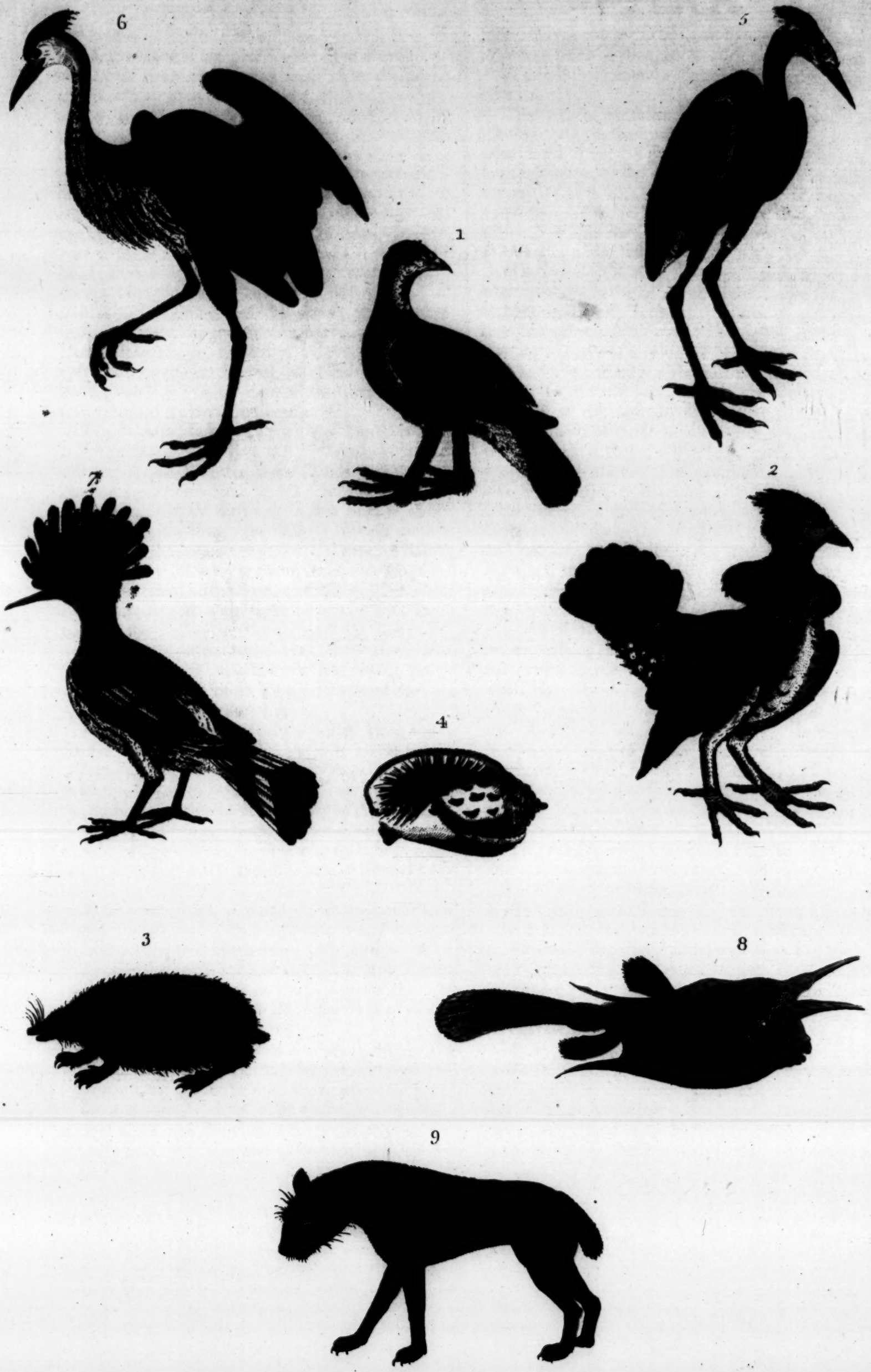
HEDGE-HOG, COMMON; the Erinaceus Europeus of Linnæus. Though the Hedge-Hog has a very formidable appearance, it is one of the moſt harmleſs creatures in the univerſe. Incapable, or unwilling to offend, all it's precautions are only directed to it's own ſecurity; and it is armed with a thouſand points, not to invade, but to repel an enemy. While other animals truſt to their force, their cunning, or their ſwiftneſs, this creature, deſtitute of all theſe, has but one expedient for it's ſafety, from which alone it often finds protection: as ſoon as it perceives itſelf attacked, it withdraws all it's vulnerable parts, rolls itſelf into a kind of ball, and preſents nothing but it's ſpines to the foe; and thus, while it refrains from attempting to injure any other quadruped, it renders itſelf in a great meaſure proof againſt violence.

The head, back, and ſides, of this animal, are covered with ſtrong ſharp ſpines or prickles; the noſe, breaſt, and belly, are cloathed with fine ſoft hair; the legs are ſhort, almoſt naked, and of a duſky colour; the ears are broad, round, and naked; the eyes are ſmall, and placed high in the head; the mouth is alſo ſmall, but well furniſhed with teeth, ſerving however only to chew it's food, being of little uſe either to attack it's enemies or to defend itſelf. The toes on each foot, which are five in number, are long and ſerrated; the tail is little more than an inch long, and ſo concealed by the ſpines, as ſcarcely to be viſible. The prickles are about an inch in length, and very ſharp-pointed; their points are white, the middle is black, and the lower part is of the ſame colour with the tips. From the point of the noſe to the extremity of the tail, this animal meaſures about ten inches when extended.

We have already hinted, that the Hedge-Hog, on the ſmalleſt appearance of danger, rolls itſelf up into a lump; and, altering it's whole figure, preſents only a roundiſh maſs of prickles impervious on every ſide. In this form it patiently waits till it's enemies either paſs by, or are fatigued with fruitleſs attempts to annoy it. The cat, the weaſel, the ferret, and the martin, ſoon decline the combat; and even the dog generally makes his attacks in vain. Accumulated danger only increaſes this animal's precautions to keep on it's guard. In attempting to bite, the aſſailant more frequently receives than inflicts a wound. The enraged dog may bark, and roll the animal along with his paws; but it ſtill patiently ſubmits to every indignity in order to remain ſecure. At length the dog, after expreſſing his chagrin by barking, leaves the inoffenſive animal where he found it; which perceiving itſelf freed from danger, ventures to peep out from it's ball; and, if not interrupted a ſecond time, advances deliberately to it's retreat.

Like moſt wild animals, the Hedge-Hog ſpends the greateſt part of the day in ſleep, and is principally in motion during the night. It generally reſides in ſmall thickets, in hedges, or in ditches covered with buſhes, making a hole about ſix or eight inches deep, which it lines with moſs, graſs, or leaves. It feeds on roots, fruits, worms, and inſects; but is falſely charged with ſucking cows, and wounding their udders: indeed, the ſmallneſs of it's mouth is ſufficient to exculpate it from this reproach. It is alſo ſaid to be very deſtructive to gardens and orchards, where it will roll itſelf, according to the opinion of the vulgar, amongſt a heap of fruit, and thus carry off a large quantity on it's prickles: but this imputation is as ill-grounded as the former, ſince it's ſpines are evidently ſo diſpoſed, that no fruit would ſtick on them, even were the experiment attempted. In ſhort, inſtead of being a noxious animal, and deſerving proſcription, it ſeems to be very ſerviceable in deſtroying worms and inſects, which are ſo prejudicial to vegetation.

But, as vulgar errors are not eaſily eradicated, we ſhall reſt our opinion on the evidence of the celebrated M. de Buffon. That naturaliſt acquits Hedge-Hogs of the charge of being miſchievous in gardens; but at the ſame time accuſes them of practices which, from their form and habit, we ſhould be little inclined to ſuſpect. 'I have often,' ſays he, 'had the female and her young brought me about the beginning of June: they are generally from three to five in number; at firſt they are white, and only the rudiments of their ſpines appear. I was willing to rear ſome of them, and accordingly put the dam and her young into a tub, with abundant proviſion; but the dam, inſtead of ſuckling her young, devoured them all, one after another. On another occaſion, a Hedge-Hog that had made it's way into the kitchen, diſcovered a little pot, in which was ſome meat prepared for boiling: the miſchievous animal drew out the meat, and left it's excrements in the ſtead. I kept males and females in the ſame apartment, where they lived together, but never coupled. I permitted ſeveral of them to range my garden; they did



1. BLACK AND SPOTTED HEATH COCK. 2. RUFFED HEATH COCK. 3 HEDGE HOG. 4 HELMET SHELL.
5. COMMON HERON. 6. NORTH AMERICAN ASH-COLOURED HERON. 7. HOOPOE. 8. HORNED FISH. 9. HYÆNA.

Plate LVII. Published as the Act directs, by Harrison & Co. Nov.r 19.th 1785.

flapping makes a noiſe much like a drum for about the ſpace of a minute; then the noiſe ceaſes for half a quarter of an hour, after which it begins again. By this noiſe we were directed to the place where the unfortunate bird ſat, and found it on a rotten moſſy tree. By flapping one wing againſt the other, it means to call it's mate; and the humming noiſe which enſues thereon may be heard half a quarter of a league.'

HEATH-COCK, BLACK AND SPOTTED. This ſpecies is a native of Hudſon's Bay. It is larger than the partridge, but ſmaller than the pheaſant. The bill is like that of the hen, of a dark lead-colour; the noſtrils are covered with black feathers; the fore-part and under-ſide of the head are black; and between the angles of the mouth and the eyes there is a white ſpot, and another behind the eyes. White lines proceed from the corners of the mouth; and, paſſing under the eyes, tend downwards, and unite under the throat. The top of the head, the neck, back, and coverts of the tail, are variegated with black and duſky brown; as are alſo the covert-feathers of the wings: the quills of the wings are duſky, edged with brown; and the tail-feathers are black, tipt with orange. The breaſt and belly are black; the lower belly and thighs are black, mottled with brown and white; the legs are covered down to the feet with ſlender brown feathers, tranſverſely waved with black lines; and the hinder toe is hid in the feathers.

HEATOTOLT. An American bird, deſcribed by Nieremberg, and called by ſome authors avis venti. It is remarkable on account of a very large and round creſt of whitiſh feathers on it's head; it's breaſt is of a browniſh grey colour; it's belly is white; and it's feet are yellow: it's tail, when expanded, is round, variegated with black and white; and it's back and wings are black.

HEDGE-HOG. A genus of animals having five toes on each foot, and the body covered with ſtrong ſhort ſpines.

HEDGE-HOG, COMMON; the Erinaceus Europeus of Linnæus. Though the Hedge-Hog has a very formidable appearance, it is one of the moſt harmleſs creatures in the univerſe. Incapable, or unwilling to offend, all it's precautions are only directed to it's own ſecurity; and it is armed with a thouſand points, not to invade, but to repel an enemy. While other animals truſt to their force, their cunning, or their ſwiftneſs, this creature, deſtitute of all theſe, has but one expedient for it's ſafety, from which alone it often finds protection: as ſoon as it perceives itſelf attacked, it withdraws all it's vulnerable parts, rolls itſelf into a kind of ball, and preſents nothing but it's ſpines to the foe; and thus, while it refrains from attempting to injure any other quadruped, it renders itſelf in a great meaſure proof againſt violence.

The head, back, and ſides, of this animal, are covered with ſtrong ſharp ſpines or prickles; the noſe, breaſt, and belly, are cloathed with fine ſoft hair; the legs are ſhort, almoſt naked, and of a duſky colour; the ears are broad, round, and naked; the eyes are ſmall, and placed high in the head; the mouth is alſo ſmall, but well furniſhed with teeth, ſerving however only to chew it's food, being of little uſe either to attack it's enemies or to defend itſelf. The toes on each foot, which are five in number, are long and ſerrated; the tail is little more than an inch long, and ſo concealed by the ſpines, as ſcarcely to be viſible. The prickles are about an inch in length, and very ſharp-pointed; their points are white, the middle is black, and the lower part is of the ſame colour with the tips. From the point of the noſe to the extremity of the tail, this animal meaſures about ten inches when extended.

We have already hinted, that the Hedge-Hog, on the ſmalleſt appearance of danger, rolls itſelf up into a lump; and, altering it's whole figure, preſents only a roundiſh maſs of prickles impervious on every ſide. In this form it patiently waits till it's enemies either paſs by, or are fatigued with fruitleſs attempts to annoy it. The cat, the weaſel, the ferret, and the martin, ſoon decline the combat; and even the dog generally makes his attacks in vain. Accumulated danger only increaſes this animal's precautions to keep on it's guard. In attempting to bite, the aſſailant more frequently receives than inflicts a wound. The enraged dog may bark, and roll the animal along with his paws; but it ſtill patiently ſubmits to every indignity in order to remain ſecure. At length the dog, after expreſſing his chagrin by barking, leaves the inoffenſive animal where he found it; which perceiving itſelf freed from danger, ventures to peep out from it's ball; and, if not interrupted a ſecond time, advances deliberately to it's retreat.

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did very little damage, and it was ſcarcely perceptible that they had been there: they lived on the fruits which fell from the trees; they dug the earth into ſhallow holes; they eat caterpillars, beetles, and worms; and they were alſo very fond of fleſh, which they devoured either boiled or raw.'

Theſe animals, which inhabit Europe and Madagaſcar, couple in the ſpring, and bring forth about the beginning of ſummer. They ſleep during the winter; and conſequently the ſtories which have been propagated reſpecting their providing againſt that ſeaſon are certainly falſe: they are at all times ſatisfied with a ſmall portion of food; and are capable of ſubſiſting a long time without any aliment whatever. Like all other animals in a dormant ſtate during the winter ſeaſon, their blood is cold. Their fleſh, though generally rejected as unfit for human food, is nevertheleſs ſaid by ſome to poſſeſs an excellent flavour.

HEDGE-HOG, SIBERIAN; the Erinaceus Auritus. This ſpecies, which was firſt deſcribed by Dr. Pallas, is common in all the ſouthern deſarts from the Dan to the Oby. It is generally much inferior in ſize to the common kind; but, beyond Baikal, it is found much larger than that ſpecies. The ears are large, open, oval and naked, brown round the edges, and internally lined with ſoft whitiſh hairs; the upper part of the body is covered with ſlender brown ſpines, ſurrounded at their baſes and near their extremities with a ring of white; the limbs and belly are cloathed with a moſt elegant white ſoft fur; and the tail is extremely ſhort.

Theſe animals, which become extremely fat, ſleep during the winter ſeaſon in holes, each a few inches deep. They feed chiefly on inſects; and it has been proved by experiments, that one of them will eat upwards of a hundred cantharides without any ſenſible injury. They poſſeſs all the manners and habits of the common kind; rolling themſelves up on the approach of danger, and patiently ſubmitting to inſult, provided they can purchaſe ſecurity.

HEDGE-HOG, ASIATIC; the Tendrae of Buffon. Like the common Hedge-Hog, this animal is covered with prickles, though mixed in a greater proportion with hair; but it does not defend itſelf by rolling up into a ball. It has a long ſlender noſe, ſhort round ears, and ſhort legs; the face, throat, belly, buttocks, and legs, are thinly covered with fine whitiſh hair; and the tail, which is very ſhort, is covered with ſpines. It is about the ſize of the mole; and inhabits Madagaſcar, and ſeveral of the oriental iſles.

Another variety, deſcribed by M. Buffon, and ſomewhat larger, is armed with ſpines only on the top and hind-part of the head, the top and ſides of the neck, and the ſhoulders; and the reſt of the body is covered with yellow briſtles, intermixed with a ſmall quantity of black, which are longer than the others.

Theſe animals, which are only varieties of the ſame ſpecies, have five toes on each foot, and inhabit the ſame countries. They have grunting voices like hogs, grow extremely fat, and multiply prodigiouſly. They frequent ſhallow waters, whether freſh or ſalt; burrow on the land; and lie torpid ſix months in the year, during which time their old hair falls off, and is renewed on their revival. Their fleſh is ſoft, ſtringy, and inſipid; nevertheleſs, the Indians eat it, and even conſider it as a peculiar delicacy.

HEDGE-HOG, GUIANA; the Erinaceus Inauris of Linnæus. This animal has no external ears, but only two orifices which ſerve as auditory ducts. The head is ſhort and thick; the back and ſides are covered with ſhort ſpines of an aſh-colour tinged with yellow; and the face, belly, legs, and tail, are inveſted with ſoft whitiſh hair. The length of this animal is about eight inches; it's tail is ſhort; and it's claws are long and crooked. It is a native of the country from which it receives it's name.

HEDGE-HOG, SEA. This creature is entirely covered with thick thorns or prickles; it's body is round; and it's eyes and tail are affixed to it's belly. Inſtead of teeth, it is furniſhed with two ſmall hard ſtones, an inch broad, with which it cruſhes ſea-crabs, and other ſhell-fiſh, on which it ſubſiſts. It's prickles, which are as ſharp as needles, are either raiſed or depreſſed at pleaſure. In the middle of the belly there is a ſort of bladder, or bag, filled with wind, of which excellent iſinglaſs is made. It ſwims very ſlowly; and conſequently would be an eaſy prey for other fiſh, was it not ſo compleatly armed with ſpines.

There are ſeveral ſpecies of theſe animals, differing from each other in ſize, and in the diſpoſition of their prickles: ſome are not larger than a foot-ball, and others are as big as a twelve-inch diameter globe. Their fleſh is generally reckoned indifferent food, and ſome ſpecies are abſolutely poiſonous; nevertheleſs, the Americans often amuſe themſelves with the barren pleaſure of catching theſe frightful creatures by means of lines and hooks baited with pieces of the ſea-crab. The animal approaches the bait with it's ſpines flattened; but, when hooked and ſtopped by the line, immediately all it's ſpines are erected; it's whole body being armed in ſuch a manner, that it is impoſſible to lay hold of it: for this reaſon it is dragged to ſome diſtance from the water, where it quickly expires.

HEDGE-SPARROW. The Engliſh appellation for a ſpecies of the motacilla. See SPARROW, HEDGE.

HELEGUG. A provincial name ſometimes uſed to expreſs the anas arctica Cluſii, a web-footed fowl common on the Britiſh coaſts.

HELIOCENTROS. An appellation given by ſome authors to a poiſonous inſect, called by Ariſtotle phalangium decticum, and by the Latins ſolipuga.

HELIX. A kind of ſhell-fiſh, or teſtaceous animal, always found floating on the water, and diſtinguiſhed by the epithets of janthina and violacea. It is about the ſize of the ſnail; and is ſupported on the ſurface of the water by a ſmall cluſter of bubbles filled with air, and a tenacious ſlimy ſubſtance. This animal appears to be oviparous; and theſe bubbles ſerve only as a nidus for it's eggs. It is probable that it never dives to the bottom, nor voluntarily approaches any ſhore, the ſhell being exceedingly thin and brittle. Every ſhell contains a ſmall quantity of fluid, of the moſt beautiful red purple colour that can be conceived: this gives a laſting and elegant tinge to linen cloth, and is by many eſteemed the purpura of the ancients. The Helix is found in the Mediterranean.

HELMET PIGEON; the Columba Galeata of Moore. This bird receives it's name from having it's head covered with plumage of a diſtinct colour from that of the reſt of it's body, and appearing ſomewhat like a helmet. It is rather larger

larger than that Pigeon called the nun: the head, tail, and long feathers of the wings, are always of the ſame colour, which is either red, black, or yellow; and the reſt of the body is entirely white.

HELMET SHELL. A family of Shells, which may be defined as ſemigloboſe, the back being round or convex, and the under or mouth-part flat. Their clavicles or turbans are nearly flat, and always very ſhort. The mouth, which is long and narrow, ends in a ſulcus at the top, which turns very large, ſtrong, and crooked, on the back; the lip is ſtrongly ſerrated, and riſes into a high thick border or ledge on the back; and the pillar is generally ſtrongly toothed, and beſet with ſmall aſperities.

HELOPS. A fiſh well known to the ancients, and mentioned by many of the claſſical writers, as well as the naturaliſts of antiquity. It ſeems to have been ſynonymous with their oniſcus, and accipeſius, which is generally ſuppoſed to mean our ſturgeon.

HEMATOPUS. An appellation given by Bellonius, and ſome other authors, to the bird commonly known in England by the name of the ſea-pie, the pica marina of Ray.

HEMEROBIUS. A genus of inſects of the neuroptera order; the characters of which are theſe: the mouth is furniſhed with two tentacula; the wings are deflex without folds; and the antennæ are longer than the thorax, ſetaceous, and extended. Naturaliſts enumerate fifteen ſpecies. See CHRYSOPIS.

HEMIPTERA. In the Linnæan ſyſtem, this forms the ſecond order of inſects, comprehending twelve genera; namely, the blatta, mantis, gryllus, fulgora, cicada, notonecta, nepa, cimex, aphis, kermes, coccus, and thrips. The characters of this order are theſe: the mouth is either ſituated in the breaſt, or inclined towards it; and the upper wings are ſemicruſtaceous, ſemimembranaceous, incumbent, and unconnected by a ſtraight longitudinal ſuture, as in the order of coleoptera. The term Hemiptera is derived from Hemiſus, Half; and Pteron, a Wing.

HEMISPHŒRIA. An appellation given by Hill to the genus of flies commonly called the lady-cow or lady-bird; and ranked by Ray and other naturaliſts among beetles.

HEN. The general name of the female among the winged tribes; but more commonly uſed to expreſs the female of the gallinaceous kind.

HEN, WATER. A name frequently given to the Moor-Hen, called alſo the common gallinule. See GALLINULE, COMMON.

HENBANE LOUSE. An appellation given to a peculiar inſect frequently found on the plant from which it receives it's name. It is of the order of cimices; it's colour is a bright red, ſpotted with black; it feeds on the juices of the henbane; and it is remarkable that the fetid ſap of this plant becomes of an agreeable aromatic flavour in the body of the inſect.

Theſe creatures depoſit their eggs on the leaves of the henbane about the months of June and July; and in proceſs of time they are hatched into perfect cimices, not into worms. Theſe eggs, which are extremely numerous, yield a fine carnation colour, that ſeems capable of affording a permanent tinge, by the aſſiſtance of allum, and other aſtringents uſed in dyeing.

HEN-HARRIER; the Falco Cyaneus of Linnæus. This bird, which is properly of the hawk kind, has been ſuppoſed by many naturaliſts to be the male ſubbuteo; the female of which is ſo very different, that it has been called by another name, viz. the ring-tail; but this is certainly a vulgar error, the ſpecies appearing by inconteſtible evidence to be diſtinct.

The Hen-Harrier is ſmaller than the ring-tail: the head, neck, and back, are dove-coloured; the ſcapulars are browniſh; the rump is ſomewhat whitiſh; the breaſt is a pure white, variegated with tranſverſe brown ſpots; the wings and tail are a blueiſh grey, variegated with black; and the legs are yellow, and ſmaller than is uſual in the hawk kind.

This bird flies near the ſurface of the ground in ſearch of prey; and is extremely deſtructive to young poultry and the feathered game. It breeds on the ground; and has never been obſerved to ſettle on trees.

HENOTHRIX. The name of a fly of the ſeticauda or hair-tailed kind; diſtinguiſhed from the other ſpecies by having only one hair, and hence by ſome called uniſeta. The whole body is black, except the middle of the back and belly, which are red; the wings are ſilvery; and the antennæ are ſmall and black. It is very common in the warm climates; and is uſually found on the ammi, or biſhop's weed.

HEPATUS. A marine fiſh common in the Mediterranean, remarkable for it's liver-colour, from whence it receives it's name. It's figure is broad and flat; it has very prominent eyes; and a remarkably broad tail, near the baſis of which there is a large black ſpot. It's teeth are large, round, and ſomewhat pointed; and it has only one dorſal fin, the anterior rays of which are prickly, and the poſterior ſoft.

In the Artedian ſyſtem, this fiſh is a ſpecies of the labrus; and diſtinguiſhed by the appellation of the labrus with the lower jaw longer than the upper, a forked tail, and black tranſverſe lines on the ſides.

HEPSETUS. An appellation given to a ſmall ſea-fiſh, called alſo anguilla and atherina. It is long, ſlender, and almoſt pellucid; the back is variegated with black ſpots; and the tail is bifid. It is caught on the ſhores of the Mediterranean, and ſome other ſeas. It's fleſh is reckoned extremely delicate; but being full of bones, is not much eſteemed.

HERBIVOROUS. An epithet given to ſuch creatures as feed only on vegetables, in contradiſtinction to thoſe which are carnivorous, or feed on fleſh.

HERMAPHRODITE. An appellation uſed to expreſs perſons or animals which are furniſhed with the genital members both of the male and female ſexes. Some naturaliſts and anatomiſts have expreſsly denied that there are any of the human race which anſwer this deſcription; but certain it is, that many of the inſect and reptile tribes are really Hermaphrodites.

In the Memoirs of the French Academy we meet with an account of a very extraordinary kind of Hermaphrodites, which not only partake of both ſexes, but alſo perform the offices of both at the ſame time. Of this claſs are earth-worms, land-ſnails, freſh-water ſnails, and leeches.

The method of copulation practiſed among theſe creatures may be illuſtrated in the inſtance of earth-worms. Theſe little animals creep, two by two, out of their holes; and diſpoſe their bodies

in ſuch a manner, that the head of the one is turned to the tail of the other. Being thus extended, a little conical button, or papilla, is protruded by each, and received into the aperture of the other.

HERMIT. An animal of the lobſter kind, having rough claws, the right being the longeſt; with the legs ſubulated, and ſerrated on the upper ridge; and the tail naked, tender, and furniſhed with a hook, by which it ſecures itſelf in it's adopted habitation.

This ſpecies inhabits the empty cavities of turbinated ſhells, changing it's lodgings, according to it's increaſe of growth, from the ſmall nerite to the large whelk. Nature has denied it the ſtrong covering behind, which ſhe has beſtowed on others of this claſs; and therefore ſeems to direct it for refuge to the deſerted caſes of other animals.

Ariſtotle deſcribes this animal under the name of the karkinion: the moderns call it the ſoldier, from the idea of it's dwelling in a tent; and the Hermit, from it's retiring into a ſhell. See CRAB, SOLDIER.

HERON. In the Linnæan ſyſtem, the Heron forms a genus of the order of grallæ; the diſtinguiſhing characters of which are theſe: a long ſtraight, pointed bill, with furrows from the noſtrils to the extremity; a linear noſtril; and feet having four toes. To this genus belong the ardeola, bittern, cocoi, crane, the gaza giovani or ſmall white Heron, the gaza or greater white Heron, the ſoco, the night-raven, the ſtork, and ſeveral others.

Though birds of the crane, the ſtork, and the Heron kind, have a ſtrong affinity to each other, the Heron may be diſtinguiſhed from them, not only by it's ſize, which is much leſs, but by it's bill, which is much longer in proportion; and particularly by the middle claw on each foot, which is ſerrated, for the better ſeizing and ſecuring it's ſlippery prey. There is alſo an anatomical diſtinction in which Herons differ from all other birds, viz. that they have but one cæcum, while all other birds are furniſhed with two.

Briſon has enumerated no fewer than forty-ſeven ſpecies of this tribe, all differing in figure, ſize, and plumage; but they all ſeem poſſeſſed of the ſame manners; and merit one general character of cowardice, rapacity, indolence, and yet inſatiable hunger. Other birds become fat by an abundant ſupply of food; but Herons, though exceſſively voracious and deſtructive, are ever lean and craving.

HERON, COMMON; the Ardea Cinerea of Linnæus. This bird is remarkably light in proportion to it's bulk, ſcarcely weighing three pounds and a half, though it's length is upwards of three feet, and it's breadth nearly five. The body is very ſmall, and the ſkin remarkably thin; the bill is ſix inches long, very ſtrong and pointed, the edges being thin and rough, the colour duſky above, and yellow beneath; the irides are of a deep yellow hue; and the orbits, as well as the ſpace between them and the bill, are covered with a naked greeniſh ſkin. The forehead and the crown are white; the hind-part of the head is adorned with a looſe pendent creſt of long black waving feathers; the upper part of the neck is pure white, and the coverts of the wings are light grey. The back is cloathed only with down, covered with the ſcapulars; the fore-part of the neck is white ſpotted with a double row of black, the plumage being long, narrow, unwebbed, and falling looſely over the breaſt; and the ſcapulars, which are of the ſame texture, are grey ſtreaked with white. The ridges of the wings are white; the primaries and the baſtard-wing are black; and the breaſt, belly, and thighs, are white, the laſt being ſomewhat daſhed with yellow. The tail is compoſed of twelve ſhort cinereous feathers; the legs are of a dirty green colour; the toes are long; and the inner edge of the middle claw is finely ſerrated.

The female is deſtitute of the long creſt of the male, having only a ſhort plume of duſky feathers; the head is grey; the feathers above the breaſt are ſhort; the ſcapulars are grey, and webbed; and the ſides are alſo grey. From the variations of colours between this bird and the male, ſhe has generally been ſuppoſed to be of a different ſpecies; but Pennant, and all the moſt accurate naturaliſts of modern times, conſider them as the ſame.

Though the general appearance of the Heron might naturally enough excite an idea of it's being fitted for a ſtate of warfare, it is nevertheleſs ſo very cowardly, as to fly at the approach of a ſparrow-hawk. In ancient times, one of the amuſements of the great conſiſted in purſuing this timorous creature with the falcon: and Heron-hawking was once ſo much admired, that laws were enacted for the preſervation of the ſpecies; thoſe who deſtroyed their eggs being ſubjected to a penalty of twenty ſhillings for every offence. At preſent, however, the effects of the ill-judged policy of our anceſtors are felt by their poſterity; for, as the amuſement of hawking is no longer purſued, and ſtocking fiſh-ponds has become faſhionable, the Heron may be regarded as a deſtructive and formidable creature: it commits the greateſt devaſtations in freſh waters of all other birds; and there is ſcarcely a fiſh that it will not ſtrike at and wound, though unable to carry it away. But the ſmaller fry conſtitute it's principal ſubſiſtence: theſe, being purſued by their larger fellows of the deep, ſeek for refuge in ſhallow water, where they find the Heron a ſtill more fatal enemy.

The Heron wades into the water as far as poſſible, and there patiently waits the approach of it's prey; which no ſooner appears, than it darts on it with unerring and inevitable aim; and after this manner it will ſometimes deſtroy more fiſhes in one week than perhaps any other bird in ſome months. 'I have ſeen a Heron,' ſays Willughby, 'which had been ſhot, that had ſeventeen carps in his belly at once, which he will digeſt in ſeven or eight hours, and then to fiſhing again. I have ſeen a carp,' continues he, 'taken out of a Heron's belly, nine inches and a half long. Several gentlemen who kept tame Herons, in order to prove what quantities one of them would eat in a day, have put ſeveral ſmaller roach and dace into a tub; and they have found him eat fifty in a day, one day with another. In this manner, a ſingle Heron will often deſtroy fifteen thouſand carp in a ſingle half year.'

Such are the rapacious powers of this tyrant of the freſh-waters. In general he is ſeen taking his gloomy ſtand by the ſide of a lake, as if meditating miſchief, motionleſs, and gorged with plunder. His uſual attitude on ſuch occaſions is that of ſinking his long neck between his ſhoulders, and keeping his head turned on one ſide, as if viewing the pool more intently. When the call of hunger returns, the toil of an hour or two is generally ſufficient to fill his capacious ſtomach; and he retires

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long before night to his lodging in ſome wood, which he quits early the enſuing morning, in order to purſue his uſual occupation.

But though the Heron generally finds a plentiful ſupply of food in open and favourable weather, in cold and ſtormy ſeaſons his prey is no longer within reach, the fiſh then abiding in the deep as their warmeſt ſituation: frogs and lizards alſo ſeldom venturing from their retreats during the continuance of ſuch weather, the Heron is obliged to practiſe abſtinence, and to feed on ſuch weeds as the margin of the lake affords. Under ſuch circumſtances, he contracts a conſumptive diſpoſition, which ſucceeding plenty is incapable of removing; ſo that the meagre glutton divides his time between want and riot, alternately feeling the extremes of each: hence, notwithſtanding the labour with which he catches his prey, and the amazing quantity he devours, he is always lean and emaciated.

As the Heron is deſtructive to newly-ſtocked ponds almoſt beyond credibility, various modes of retaliation have been adopted. Willughby gives the ſubſequent receipt for catching him. 'Having found his haunt, get three or four ſmall roach or dace; and having provided a ſtrong hook with a wire to it, this is drawn juſt within the ſkin of the fiſh, beginning without-ſide the gills, and running it to the tail, by which the fiſh will not be killed, but continue alive for five or ſix days. Then having a ſtrong line made of ſilk and wire, about two yards and a half long, it is tied to a ſtone at one end, the fiſh with the hook being ſuffered to ſwim about at the other: this being properly diſpoſed in ſhallow water, the Heron will ſeize on the fiſh to it's own deſtruction. From this method we may learn, that the fiſh muſt be alive, otherwiſe the Heron will not touch it; and that this bird, as well as all thoſe that feed on fiſh, muſt be their own caterers; for they will not prey on ſuch fiſh as die naturally, or are killed by others.'

Though the Heron lives chiefly in the vicinity of pools and marſhes, it ſometimes builds it's neſt on the tops of the higheſt trees, and on cliffs impending the ſea, compoſed of ſticks, lined with wool; and the female lays four large eggs of a pale green colour. Such, however, is the natural indolence of this bird, that it never is at the pains of building a neſt for itſelf, if it can procure one deſerted either by the owl or the crow: indeed, it uſually enlarges it, and lines it internally; and, ſhould the original poſſeſſor happen to renew his claim, the uſurper never fails to aſſume courage ſufficient to repel the attack.

The French ſeem to have availed themſelves of the indolence of theſe birds in fabricating their neſts; and they actually provide places fitted with proper materials for their neſtling, which they term heronries. In France Herons are deemed proper for the table, and the fleſh of the young ones in particular is held in very high eſtimation. In order to obtain it, the natives erect high ſheds along ſome ſtream abounding with fiſh; and having furniſhed them with fit ſubſtances for the Herons to neſtle, theſe birds build and breed there in great abundance. As ſoon as the young are ſuppoſed to be of a proper ſize, the owner of the heronry carries off ſuch of them as he thinks proper, and ſells them to the neighbouring gentry at a pretty high price.

The fleſh of Herons was anciently a favourite diſh in England, and was even thought a delicacy fit for a monarch; but as modern times have varied taſtes as well as manners, Herons in general now remain unmoleſted either by the fowler or the epicure. Their neſts are often found in great numbers in the midſt of extenſive foreſts and groves, where they have long been accuſtomed to find protection. They ſeem fond of ſociety; and, like rooks, build their neſts contiguous to thoſe of fowls of their kind.

No ſooner are the young Herons excluded, than they become voracious and importunate: the old ones are perpetually on the wing to ſupply them with abundance of food; and the quantity, as well as the ſize of the fiſh they take on ſuch occaſions, are equally ſurprizing. By a cruel artifice of ſewing up the vents of young Herons, (which increaſes their ſcreamings, while it renders them incapable of partaking of the prey ſo liberally provided for them) ſome perſons have found means to procure a conſiderable quantity of fiſh for ſeveral days together, by plundering their neſts; till the old ones, tired out with an importunity which they could not gratify, have deſerted their young, and left them to their fate.

The Heron is ſaid to be a very long-lived bird: according to Keyſler's account, it may ſometimes exceed the age of ſixty years; and, by a recent inſtance of one caught in Holland, it's longevity is again confirmed, the bird having a ſilver plate faſtened to one leg, importing, that it had been ſtruck for the elector of Cologne's hawks thirty-five years before.

Heron, Great White. The length of this bird, from the tip of the bill to the end of the claws, is four feet and a half, and to the end of the tail three feet and a quarter; the expanſion of the wings is nearly five feet and a half; and the weight is about two pounds and a half. This bird being entirely white, may thereby be diſtinguiſhed from the common Heron; it may alſo be known by it's inferior ſize, the length of it's tail, and it's being deſtitute of a creſt. It is ſeldom ſeen in England.

There is another variety, called the leſſer white Heron, which only differs from the preceding in ſize, and in being adorned with a creſt. A third variety is ſtill ſmaller: the top of the head and the neck are of a ſaffron colour, as well as part of the breaſt; but the reſt of the body is white.

Heron, Little White, of Catesby. The body of this ſpecies is entirely white; the bill is red, and a little crooked; the irides are yellow; and the feet are green.

Heron, Red-Legged. This bird is generally ſuppoſed to be the leaſt of the kind. The neck is ſhort; the body is entirely of a ſaffron colour, inclining to cheſnut, deeper underneath, and fainter above; the tail is ſo very ſmall, as to be ſcarcely perceptible; the bill is of a blueiſh green hue near the head, but black towards the extremity; and the legs and feet are a deep red.

Heron, Ash-Coloured, North American. This ſpecies, which is ſomewhat larger than the common Heron, differs from it in having a brown back, in wanting the white feathers on the forehead, and the black ſpots on the ſides below the bottom of the neck. The bill is ſtraight, ſharp-pointed, ſix inches long, and ſerrated both above and below towards the extremity; the upper chap is channelled and black; and the noſtrils are placed pretty near the head. Between the noſtrils and the eyes the ſkin is naked, and of a greeniſh yellow hue;

hue; the lower chap is orange-coloured; and the top of the head is covered with long black feathers, forming a pendent creſt. The ſides and upper part of the head are white; the neck is covered with long, brown, ſlender feathers, tranſverſely barred with duſky on the hinder part; the back, and the upper ſides of the wings and tail, are of a browniſh aſh-colour; and the ſkin which connects the joints of the wings is covered with duſky feathers tipt with red. The breaſt is white, ſprinkled with long black ſpots, mixed with a little reddiſh brown; the thighs are of a reddiſh brown colour; the belly is white; the back is inveſted with a cinereous down, concealed by the long feathers ſpringing from the ſhoulders; the legs are covered with duſky ſcales; the claws are black; and the outer toes are joined to the middle ones, towards their baſes, by a thin web.

Heron, Yellowish Ash-Coloured, of Marseilles. This ſpecies reſembles the common Heron in ſhape; but it's colours are different, and it is deſtitute of a creſt. The bill and the head are very long; the neck is cinereous; the belly is aſh-coloured, and ſeveral black and brown lines run between it and the throat; the upper part of the tail and back are red; the prime-feathers of the wings are black; and the coverts are of a deep yellow hue.

Heron, Yellow and Green. The bill of this ſpecies is three inches long, black above, and yellow underneath; the irides, as well as part of the neck down to the chin, are white; but the remainder of the neck, the top of the head, the breaſt, and the belly, are variegated with brown lines; and the back is black. The wings are yellowiſh with black ſpots; the tail-feathers, which are ſhort and white, exhibit the appearance of hair; the thighs are cinereous; the feet are black; and the claws are yellow at their extremities. This bird is a native of France, and ſome other continental countries.

Heron, Brazilian, with a serrated Bill. This bird is ſomewhat larger than the duck: the fore-part of the bill, both above and below, is double notched; the irides are of a gold colour; and all the upper part of the head and neck has pretty long feathers, of a pale yellow hue, mottled with black. The lower part of the neck, the breaſt, and the lower belly, are covered with white feathers waved with brown; but the back and wings are brown undulated with yellow. The prime-feathers of the wings have an equal mixture of black and aſh-colour; and the tail-feathers are tranſverſely barred with white lines.

Heron, Black, of Aldrovandus. The neck of this bird is conſiderably ſhorter than that of the common Heron; the colour is every where uniform, being blackiſh, except on the neck, where it is encompaſſed with a white ring; and the bill is yellow, with a black ſpot at the end of the upper and lower mandible.

Heron, Crab. This bird, which is common in the Caribbee Iſlands, receives it's name from feeding uſually on crabs. Of this ſpecies there are two varieties. The firſt differs very little from the European Heron, except that it has four large yellow ſpots on the ſkin of the belly, and an equal number on the thighs: theſe ſpots, which are bitter as gall, muſt be carefully extracted after the bird is killed, otherwiſe they impart a very diſagreeable bitterneſs to the fleſh, which, when properly dreſſed, is eſteemed pretty good.

The other variety of the Crab Heron is very beautiful. The body is of a larger make than that of other birds of the ſame genus, and yet the neck is three inches longer than the whole body. The wings are of an equal length with the tail; and the legs are long, ſlender, and greeniſh. The head is black; and on it's top there is a beautiful tuft of blueiſh feathers, below which there are two pendent plumes of fine ſlender ſlate-coloured feathers about nine inches in length: the eyes, which are large and bright, are ſurrounded with a gold-coloured circle; on the lower part of the neck there are five or ſix elegant white plumes, which are extremely valued by the natives of the Caribbees, eſpecially as they are only found on old birds. The whole back is covered with elegant blueiſh feathers; and the plumage of the wings is of the ſame colour.

Heron, Blueish Black. This bird, which is ſometimes called the black and blue gaulding, is about eighteen inches long; the bill, which meaſures two inches and a half, is covered near the baſe with a green ſkin, but the reſt is blueiſh; on the top of the head there is a creſt of long blueiſh black feathers; of which colour likewiſe is the whole body, except the breaſt and belly, which are lighter; and the legs, which are ſeven inches long, are covered with greeniſh ſcales.

Heron, Blue. This ſpecies is about the ſize of the common Heron; it's length, from the tip of the bill to the end of the toes, is three feet; and it's weight is nearly three pounds. The bill is wholly black, ſlightly incurvated downwards, and hooked at the point; the head is adorned with a beautiful creſt of ſky-blue plumes; but the ſides of the head from the bill, and the under-part next the eyes, are white. The covert and ſcapular feathers of the wings are of a pale blue colour, but the quill-feathers are black with blue edges. The reſt of the body is of a blueiſh lead-colour; the feet are yellowiſh, with very long toes; the middle claw is ſerrated; and the exterior toes are connected to the middle by a membrane.

HERRING. The Herring is a ſpecies of the clupea. It's diſtinguiſhing characters are; that there are eight branchioſtegous rays; and that the belly is extremely ſharp, and frequently ſerrated.

Herrings differ greatly in ſize; but their uſual length is from nine to twelve inches. The back and ſides are green varied with blue, and the belly is ſilvery; a ſcaly line runs along the belly from the head to the tail; the ſcales, which are large and thin, eaſily fall off; the eyes are very large; the edges of the upper jaw, and the tongue, are very rough, but the mouth is deſtitute of teeth. The gill-covers are extremely looſe and patulous, which occaſions the immediate death of the fiſh when taken out of it's native element; and hence the well-known proverb, 'As dead as a Herring.' The dorſal fin conſiſts of ſeventeen rays; the two ventral fins have nine, the pectoral ſeventeen, and the anal fourteen. The tail is extremely forked; the lateral line is hid beneath the ſcales; and the ſides are compreſſed.

Herrings are found in the greateſt abundance in the higher northern latitudes. In thoſe unnavigable ſeas which are covered with ice for a great part of the year, they find a quiet and ſafe retreat from all their numerous enemies: thither neither man, nor their ſtill more deſtructive enemy the fin-fiſh, nor the cachalot, dares to purſue them. The quantity of inſect food which thoſe ſeas ſup-

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ply is amazing; which, added to the ſecurity of theſe fiſhes under the icy rigour of the climate, render their increaſe great beyond expreſſion; and from theſe retreats ſome authors are of opinion they would never depart, did not their numbers render it neceſſary for them to migrate in queſt of food congenial to their appetites.

The great colony of Herrings ſets out from the icy ſeas about the middle of winter: it is compoſed of vaſt numbers, even beyond conception; but no ſooner is it in motion, than millions of enemies appear to thin the ſquadrons. The fin-fiſh and the cachalot ſwallow hundreds at a yawn; the porpus, the grampus, the ſhark, and all the numerous tribes of dog-fiſh, find them an eaſy prey; and, deſiſting from mutual carnage, unite in devouring theſe defenceleſs animals: while the myriads of ſea-fowl that frequent the polar regions watch the progreſs of their migration, and are nearly as fatal to them as their enemies of the deep.

Thus ſurrounded with foes which they can neither avoid nor repel, theſe helpleſs emigrants find no other ſafety but that of crouding cloſer together, and leaving the extreme ranks to be firſt deſtroyed. However, they ſoon ſeparate into ſhoals, one body of which moves weſtward, and pours down along the coaſts of America as far as Carolina. In Cheſapeak Bay, the annual inundation of theſe fiſhes is ſo great, that they cover the ſhores in ſuch quantities as to become a nuiſance. Thoſe which hold more to the eaſtward, and direct their courſe for Europe, endeavour to ſave themſelves from their unrelenting purſuers by approaching the firſt ſhore they can find; and accordingly make their deſcent on Iceland about the beginning of March. When they arrive on that coaſt, their phalanx, though it has ſuffered conſiderable diminutions, is nevertheleſs of amazing extent, depth, and cloſeneſs, covering a ſpace as large as the iſland itſelf; the whole element ſeems as it were alive, and the numbers appear inexhauſtible.

That ſhoal which viſits the Britiſh coaſts, begins to appear off the Shetland Iſles in the month of April. This is the forerunner of the grand ſhoal which deſcends in June, whoſe appearance is announced by the numbers of it's voracious attendants, the gannet, the gull, the ſhark, and the porpus. When the main body is arrived, it's breadth and depth is ſuch as to alter the very appearance of the ocean. It is divided into diſtinct columns of five or ſix miles in length, and three or four in breadth; while the water curls up as the Herrings advance, and appears as if forced from it's bed. Sometimes they ſink for the ſpace of ten or fifteen minutes, then riſe again to the ſurface; and, in bright weather, reflect a variety of ſplendid colours, like a field beſpangled with azure, gold, and purple.

From the Shetland Iſles, where this great army divides, one body moves off to the weſtern coaſts of Ireland, where it meets with a neceſſity of dividing a ſecond time: one party taking to the Atlantic, is ſoon loſt in that extenſive ocean; the other paſſing into the Iriſh Sea, furniſhes a very conſiderable capture to the natives. The ſecond grand diviſion, which takes place at Shetland, viſits the northern ſhores of this iſland; and then entering the Britiſh Channel, paſſes the Land's End, and ſoon after totally diſappears.

Thus the Herrings, expelled from their native ſeas, ſeek thoſe bays and ſhores where food preſents itſelf in greateſt plenty, and where they are the leaſt liable to meet with their cruel purſuers of the deep. In general, the larger rapacious animals of the ocean avoid the more populous ſhores; and theſe are choſen by Herrings as an aſylum from more imminent danger. Thus, along the Britiſh coaſts, and thoſe of Norway, Germany, and France, they are found punctual in their viſitations: nevertheleſs, they are ſometimes capricious in their migrations; and have been known to frequent particular ſhores for a ſeries of years, and then to relinquiſh them for ever.

Towards the end of June, Herrings are in full roe; and they continue in perfection till the beginning of winter. The young ones approach the ſhores in the months of July and Auguſt, and are then from half an inch to two inches in length. Few young Herrings being found in our ſeas during winter, it is generally ſuppoſed that they return to their native haunts beneath the ice, in order to repair the vaſt deſtruction of their race in the ſummer. Some old ones continue on our coaſts the whole year, but their number is very inconſiderable.

The Herring-fiſhery is of very remote antiquity. The Dutch, remarkable for their perſevering induſtry, firſt engaged in it about the year 1164: they kept poſſeſſion of it for ſeveral centuries; but at length it's value became ſo well known, that it gave riſe to ſeveral obſtinate conteſts between them and the Engliſh. Still, however, either from ſome defect in our government, or the mode of conducting our fiſheries, the Dutch maintain a decided ſuperiority over us in this lucrative branch of trade.

Our great ſtations are off the Shetland and Weſtern Iſles; and on the Norfolk coaſt, in which the Dutch alſo participate. Yarmouth has long been famous for it's Herring-fair, which was regulated by act of parliament in the reign of Edward III. That town is obliged by it's charter to ſend to the ſheriffs of Norwich one hundred Herrings, to be made into twenty-four pies, by them to be delivered to the lord of the manor of Eaſt Carleton, who is to convey them to the king; and hence the facetious Dr. Fuller calls the Herring a Norfolk capon.

Immenſe quantities of Herrings are annually caught on the Britiſh coaſts; many of which are conſumed while freſh; and the reſt are either ſalted, pickled, or ſmoke-dried, and exported to various parts of Europe.

Conſidered as an aliment, freſh Herrings are perfectly innocent if moderately uſed; but, when taken in quantities diſproportioned to the digeſtive powers, they frequently produce a putrefaction in the ſtomach of the alcaline kind, and are otherwiſe attended with very pernicious conſequences. Pickled Herrings are always unwholeſome food, their fleſh being rendered hard, and ſcarcely digeſtible by the vital powers: theſe, however, are leſs injurious than ſuch as are ſalted and dried; the laſt being more hardened, and conſequently leſs eaſy of digeſtion.

Viewed in a medicinal light, the Herring is ſaid to be of conſiderable importance. The veſicles called animæ, taken internally, are ſaid to be diuretic. Salted Herrings are ſometimes applied to the ſoles of the feet in fevers, with intent to draw the humours from the head, and to mitigate the febrile heat. Herring-pickle is uſed in clyſters for the dropſy, and pains in the hips; and, externally applied, it mundifies fœtid ulcers, checks

the progreſs of gangrenes, and diſſipates ſtrumous ſwellings. It is alſo ſaid to be beneficial in the quinſey, if the parts affected are anointed with a mixture of this and honey.

The Dutch Herring-fiſhery commences on the fourteenth of June, in which no leſs than a thouſand veſſels are employed: theſe, which are called buſſes, carry from forty-five to fifty tons, beſides two or three ſmall cannon. None of them are allowed to quit their ports without a convoy, unleſs they carry twenty pieces of cannon collectively, in which caſe they are permitted to ſail in company. Before they proceed on their voyage, the owners make a verbal agreement, which carries in it all the force and authority of the moſt ſolemn compact. The regulations of the admiralty of Holland, with a few variations, are followed by the French and other nations: the principal of which are; that no fiſher ſhall caſt his net within one hundred fathoms of another's boat; that while the nets are caſt, a light ſhall be kept on the hind-part of each veſſel; that when a boat is obliged by any accident to deſiſt from fiſhing, the light ſhall be caſt into the ſea; and likewiſe, that when the majority of the fleet leaves off fiſhing, the reſt ſhall be obliged to do the ſame.

From the middle of September to the middle of October is the moſt ſucceſsful period for fiſhing on the Norfolk and Suffolk coaſts. The nets which are uſed for Herrings are about five yards deep, and twenty-five long; and ſometimes ſuch numbers of them are united, that they will take in a mile in compaſs. The fiſhermen are directed to thoſe ſpots where the Herrings are moſt numerous by the hoverings and motions of the ſea-birds, which continually purſue them in expectation of prey. As the fiſhermen row gently along, they let their nets fall into the ſea, ſteering their courſe, as nearly as they are able, againſt the tide; ſo that, when they draw them, they may have the aſſiſtance of the tide. As ſoon as any boat has procured a lading, it makes to the ſhore, and delivers the fiſh to thoſe perſons who are appointed to waſh and gut them. They diſtinguiſh their Herrings into ſix different ſorts: the Fat Herring, which is the largeſt and thickeſt of all, and will keep about two or three months; the Meat-Herring, which is likewiſe large, but leſs fat and thick than the former; the Night-Herring, which is of a middling ſize; the Pluck, which has been ſomewhat damaged in catching; the Shotten Herring, which has loſt it's ſpawn, or milt; and the Copſhen, which by ſome accident or other has been deprived of it's head.

All theſe kinds of Herrings are depoſited in a tub with ſalt or brine, where they are permitted to lie for twenty-four hours: they are then taken out, put into wicker-baſkets, and waſhed; after which, they are fixed on ſmall wooden ſpits, and hung up in chimnies built for that purpoſe, at ſuch diſtances that the ſmoke may have free acceſs to them all. When theſe places, which will contain ten or twelve thouſand fiſh, are filled, a quantity of billets is laid on the floor, and ſet fire to, in order to dry them; and the doors and air-holes being cloſely ſhut, the whole place is immediately filled with ſmoke. This operation is repeated every quarter of an hour: ſo that a ſingle barrel of Herrings requires five hundred billets to dry them. A laſt conſiſts of ten barrels, and each barrel contains about a thouſand Herrings; which, when thus prepared and dried, receive the appellation of Red-Herrings.

The Dutch are moſt expert in pickling theſe fiſh; and for that purpoſe they take them about the middle of ſummer. Their uſual method of procedure is as follows: As ſoon as the Herrings are liberated from the nets, they are gutted and waſhed; then they are put into ſtrong brine, made of water and ſea-ſalt, for fifteen hours; after which they are taken out, well drained, and regularly diſpoſed into barrels, with a layer of ſalt at the bottom of each, and another at the top. Care is likewiſe taken that no air be admitted, nor the brine ſuffered to leak; either of which would be injurious to the preſervation of the fiſh.

HERRING GULL; the Larus Fuſcus of Linnæus. A bird of the larus kind, about the ſize of the duck, remarkable for it's voraciouſneſs, and particularly for devouring vaſt numbers of Herrings. See GULL, HERRING.

HIATICULA. See LARK, SEA.

HIATULA. An appellation given by ſome naturaliſts to the fiſh more uſually called the channa.

HIATULA is alſo a name by which Gaza and ſome others have called the chama, a genus of ſhell-fiſh diſtinguiſhed from other kinds by always keeping it's ſhell in ſome meaſure open; and, in many ſpecies, it is incapable of ſhutting it entirely.

HICKWALL. A ſmall ſpecies of woodpecker, called by authors picus varius minor: it weighs about an ounce; and it's colours are a beautiful variegation of black, white, and brown. The male has a red ſpot on the crown of the head, and the female a red one; which marks ſufficiently diſtinguiſh the ſexes.

HIMANTOPUS. An aquatic bird conſtituting a ſpecies of charadrius in the Linnæan ſyſtem, very remarkable for the length and ſlenderneſs of it's legs. The breaſt, belly, and throat, are entirely white; the back, wings, and beak, are blackiſh; the tail is of a whitiſh grey colour; the neck is marked with ſeveral oblong black ſpots drawn downwards; and the legs and feet are red.

HIND. A female ſtag of the third year. See DEER.

HIPPELAPHUS. An animal of the deer kind, ſaid to be found in ſome parts of Norway. It is about the ſize of the elk; and, with reſpect to ſhape, partakes both of the horſe and the ſtag. The chin and throat are furniſhed with a kind of beard; the body is well compacted; the legs are long and ſlender; and the tail is very ſhort. This animal has a mane like that of the horſe; a prolongation of which is perceptible from the ſhoulders to the tail along the dorſal ſpine.

HIPPO. A ſpecies of coluber; the ſcuta of whoſe abdomen are a hundred and ſixty, and the ſquamæ of the tail a hundred.

HIPPOBOSCOS. The name given by naturaliſts to the horſe-fly, and forming a genus of the diptera claſs of inſects in the Linnæan ſyſtem. The Hippoboſcos is about the ſize of the common fly; it's body is broad, flat, ſmooth, and of ſuch a firm texture, that it is with difficulty cruſhed or broken by the fingers. It is remarkable for the obliquity of it's flight.

HIPPOCAMPUS. This creature, which is uſually caught in the Mediterranean, is a ſpecies of the ſyngnathus in the Linnæan ſyſtem. It's name is derived from Ippos, a Horſe; and Kampe, a Caterpillar; it's head reſembling a horſe, and the reſt of it's body a caterpillar.

The Hippocampus is frequently caught about three inches in length; it is as thick as the fore-

finger;

finger; the ſnout, which is long and tubular, is furniſhed with an operculum below, which opens or ſhuts at the pleaſure of the animal; the eyes are round and prominent, and between them there are two prominent tubercles. The body, down to the anus, is heptahedral, and terminated at the angles by a ſort of thorny protuberances; from the anus to the tail the ſhape is only three or four-ſided, and terminates in a point twiſted into a ſort of ſpiral line. It has two auriform gills; above which there are two apertures opening upwards. This creature has likewiſe two apertures on the belly, one of which ſerves for an excretory duct, and by the other the female depoſits her eggs. The whole body is compoſed of a ſort of annular cartilages, from diſtinct parts of which are propagated a kind of prickles. While freſh, the colour is a duſky green, blackiſh towards the tail, and ſpotted on the belly with blueiſh white ſpecks; and a ſingle fin runs along the back, of an equal height from it's riſe to it's termination. Some varieties of this ſpecies have a mane, but in general they are deſtitute of this character. However, animals of this kind are hairy in many parts of the body, and particularly about the head; but the hairs quickly fall off in drying.

HIPPOGLOSSUS. In the Linnæan ſyſtem, the Hippogloſſus is a ſpecies of the pleuronectes; and is known in England by the name of the holibut. See HOLIBUT.

HIPPOPOTAMUS; the Sea, or River-horſe. In the Linnæan diſtribution, this creature forms a diſtinct genus of animals of the order of belluæ, in the claſs of mammalia; the characters of which are: that there are two paps ſituated in the groin; that the dentes inciſores are ſix above and four below, the upper ones being placed at diſtances by pairs, and the lower ones prominent; that the dentes canini are ſingle, appearing as if obliquely cut off; and that the feet are hoofed at their margins.

The Hippopotamus is as large and formidable as the rhinoceros; and, in magnitude, inferior only to the elephant. The male has been found to meaſure ſeventeen feet in length, from the extremity of the ſnout to the inſertion of the tail; the circumference of the body is fifteen feet, and the height nearly ſeven; the legs are three feet long, and the head almoſt four: the head, indeed, is of an enormous ſize; and the very jaws extend upwards of two feet. The ears, which are ſmall and pointed, are internally lined with fine ſhort hair; the lips are beſet with ſtrong hairs ſcattered in bunches; and the body, which is of a lightiſh colour, is thinly covered with hair, at firſt ſight ſcarcely perceptible.

Some writers have erroneouſly given this animal a mane: however, the hair on that part being ſomewhat thicker than on the reſt of the body, that circumſtance probably gave riſe to the miſtake. The ſkin is very thick and ſtrong; and though incapable of reſiſting a muſquet-ball, is nevertheleſs impenetrable to the ſtroke of a ſabre. The tail is about a foot long, flat, and pointed; the hoofs are divided into four parts, and in ſome meaſure reſemble thoſe of the elephant; but though the Hippopotame is an amphibious animal, they are unconnected with membranes. The whole figure of this creature is ſomething between that of the ox and the hog; and it's voice bears ſome reſemblance to the bellowing of the one and the grunting of the other.

Though the Hippopotamus ſeems well adapted by nature for a ſtate of hoſtility, it is but little diſpoſed to exert it's prodigious ſtrength againſt an equal adverſary. It chiefly reſides at the bottoms of the great rivers and lakes of Africa, from the Niger to the Cape of Good Hope: it is found in none of the African rivers which empty themſelves into the Mediterranean except the Nile, and even there only in Upper Egypt, and in the lakes and fens of Ethiopia through which that mighty river devolves it's ſtream. In theſe ſituations it leads an indolent kind of life, ſeldom appearing diſpoſed for action, except when prompted by the calls of hunger. It purſues it's prey in the water with great ſwiftneſs and perſeverance; and is capable of continuing at the bottom for the ſpace of half an hour, without ever riſing to the ſurface for reſpiration. It traverſes the bed of the ſtream with the ſame facility as if it were walking on land; and makes terrible devaſtation in thoſe places where prey offers itſelf in abundance: but, when fiſhy aliment begins to fail, it is compelled to exchange it's aquatic retreats for the land, where it moves along very aukwardly and ſlowly. If it cannot procure food on the margin of the river, it reluctantly aſcends the higher grounds, where it commits dreadful havock on the ſugar-canes and plantations of rice and millet; and alſo feeds on the roots of trees, which it looſens with it's vaſt tuſks.

When the hapleſs natives behold their poſſeſſions thus deſtroyed by this animal, they beat drums, light fires, and raiſe a hideous outcry, in order to frighten it back to it's native element; and as the creature is extremely timorous on land, theſe ſtratagems generally prove ſucceſsful: but, if ever it happens to be wounded, or too much irritated, it then becomes formidable to all that oppoſe it; overturning every thing that comes in it's way, and appearing poſſeſſed of amazing ſtrength. When purſued, it takes to the water, and ſinks to the bottom; but frequently riſing again to the ſurface, with it's head in view, bellows in the moſt hideous manner. When wounded, it ſometimes attacks boats or canoes with great fury, and often ſinks them by biting large pieces out of their ſides; for the Hippopotame is not leſs reſolute in the water than timid on the land. However, the principle of ſelf-preſervation alone ſeems to actuate this creature's rage: if unmoleſted, it never attacks the mariners nor their boats; but, ſhould an affront, either intended or accidental, be offered to it, it's revenge is inſtantaneous, and often fatal. 'I have ſeen,' ſays a certain mariner, 'one of theſe animals open it's jaws; and, ſeizing a boat between it's teeth, at once bite and ſink it to the bottom. I have ſeen it, on another occaſion, place itſelf under one of our boats, and riſing under it, overſet it with ſix men in it, who however happily received no other injury.'

Such then is the prodigious ſtrength of the Hippopotamus; and from hence, probably, fancy has been inclined to match it in combat againſt other animals more fierce and equally formidable. The crocodile and the ſhark have been ſaid to enter the liſts againſt it, and to yield it an eaſy victory; but as the ſhark is only found at ſea, and the Hippopotamus never ventures beyond the mouths of freſh-water rivers, it is moſt probable that theſe engagements never exiſted but in the imagination. It ſometimes happens indeed, that the African princes amuſe themſelves with combats on their lakes, between this and other formidable animals;

but

but whether the rhinoceros or the crocodile are among the number, we are not competent to aſcertain. The negroes venture to attack the ſhark and the crocodile in their native element, and frequently deſtroy them; but ſo ſenſible are they of the ſuperior powers of the Hippopotamus, that they ſeldom even dare to provoke it.

As the Hippopotamus feeds on fiſh and vegetables, ſo it is highly probable that the fleſh of terreſtrial animals is equally grateful to it. The natives of Africa aſſert, that it ſometimes devours children, and other creatures which it is able to ſurprize by land; but as it's motions are extremely ſlow, animals in general are endued with ſufficient powers for eſcape.

A herd of females has but a ſingle male. The female always brings forth her young on the land, and ſeldom produces more than one at a time: at ſuch ſeaſons ſhe is extremely timorous; and no ſooner hears the ſlighteſt noiſe, than ſhe daſhes into the ſtream, and is immediately followed by her offſpring.

Theſe animals are capable of being tamed; and Belon ſays he has ſeen one ſo gentle, as to be let looſe out of a ſtable, and fed by it's keeper, without attempting any miſchief. In ſome places they are taken by means of pitfalls; in others, the natives place boards, ſtuck full of ſharp pieces of iron, in the corn-grounds, which wounding their feet, render them an eaſy prey.

The young ones are ſaid to be excellent food; and the negroes, who are in general not very delicate in the choice of their viands, evidence an equal partiality for the old. Dr. Pococke informs us, that he has ſeen their fleſh expoſed to ſale in the ſhambles; and we are told that the breaſt in particular is not leſs delicate than veal. The teeth of theſe animals are harder than ivory, and not ſo liable to turn yellow; and their ſkins, which when dried are almoſt impenetrable, are fabricated into bucklers.

This animal, which ſeems to be the behemoth mentioned in the book of Job, was certainly known among the Romans; for Auguſtus is ſaid to have exhibited one on the occaſion of his triumph over Cleopatra.

HIPPOTAURUS. The name of a creature ſaid to be generated between the bull and the mare. Unnatural as this connection may ſeem, Wagner, in his Hiſtory of Switzerland, aſſures us, that the animal produced by this intercourſe is ſometimes found wild in the mountainous parts of that country.

HIPPURIS. An appellation given to a large ſea-fiſh, the Coryphæna Hippuris of Linnæus, having a bifid tail, and ſixty dorſal rays; bearing a ſtrong reſemblance to the dorado, or gold-fiſh. This creature is remarkable for a ſort of creſt which riſes immediately behind it's head, and is continued in a long fin to it's tail; and for another, in ſome meaſure anſwering the above, reaching from the anus to the tail. Ariſtotle juſtly obſerves, that the Hippuris grows the quickeſt of all fiſh. It is caught on the coaſts of Spain, and ſome other ſhores, generally about the month of Auguſt; and it's fleſh is very delicate and well-flavoured.

HIRARA. A Brazilian animal ſtrongly reſembling the hyæna.

HIRUDELLA MARINA. A very ſingular little animal of the leech kind, having a roundiſh oblong body, adorned with many longitudinal lines or furrows. It is about an inch long, of a greyiſh colour, and ſomewhat tranſparent; it's bowels, which are viſible through the ſkin, appear at firſt ſight like ſtreaks on it's ſurface; and in the middle of the belly there is a remarkable protuberance, which, when cloſely examined, is found to be a muſcular body, in the ſhape of a ſpherical bladder: this, when fully diſtended, exhibits the appearance of a ſpherical air-pump, and has all the properties of that machine, which the animal employs at convenience. It's common figure reſembles the cup of an acorn, with the mouth a little contracted. The head of the animal reſembles that of the common leech. That part of the body which reaches from the head to the middle protuberance is of a very irregular form, frequently in motion, and continually varying it's ſhape; but the other parts move more ſlowly and leſs frequently, and preſerve their figure unaltered.

When this creature is deſirous of affixing itſelf to any other body, it makes uſe of it's protuberance applied cloſely to the ſubſtance, and exhauſted of air: hence the external air ſo firmly preſſes it's ſides againſt the object, that it is with difficulty removed.

HIRUDO. See LEECH.

HIRUNDO. The claſſical name of the ſwallow. See SWALLOW.

HISTRIX. See PORCUPINE.

HOACTLI. An American bird deſcribed by Nieremberg, about the ſize of the common hen. The legs and neck are long; the head is black, and adorned with a beautiful creſt of the ſame colour; the whole body is white; but the tail and the upper ſides of the wings are grey. The wings have a greeniſh caſt; the back is ſometimes varied with black feathers; the legs are of a pale white colour; and a circle of white, beginning at the eyes, encompaſſes the head. This bird is common near the Mexican lakes, and builds it's neſt among the reeds and ſedges that fringe their margins.

HOACTON. A Mexican bird deſcribed by Nieremberg; which, according to his account, ſeems to be of the heron or bittern kind. The belly and neck are white, ſlightly varied with brown; the reſt of the body is brown, variegated with white; and the eyes are large, with pale-coloured irides.

HOACTZIN. An appellation under which Nieremberg has brought to our notice a ſpecies of American bird about the ſize of the hen. The beak is crooked; the breaſt is of a yellowiſh white colour; the wings and tail are variegated with large pale grey and white ſpots; the neck and back are of a browniſh yellow hue; and the head is adorned with a creſt of white feathers, the inner webs of which are black. This bird, which is ſeen near Mexico in the autumnal ſeaſon, generally frequents high trees in the vicinity of waters. It feeds on ſnakes and other reptiles; and it's voice is loud and diſagreeable.

HOANGICOYA. The name of an amphibious animal, ſaid to be a bird in ſummer, and a fiſh in winter. See CROCEUS.

HOBBY; the Falco Subbuteo of Linnæus. This bird, which is of the long-winged hawk kind, was formerly uſed in the humbler walks of falconry, particularly in what was termed Daring of Larks. For this purpoſe the hawk was caſt off when the larks, aware of their moſt inveterate enemy, kept cloſe to the ground through fear, and thereby

thereby gave the fowler an eaſy opportunity of drawing a net over them.

The Hobby has a prominent and crooked bill, covered at the baſe with a yellow ſkin; the upper mandible is furniſhed with a proceſs; the irides are hazel-coloured; and above each eye there is a white line. The crown of the head, the back, and the coverts of the wings, are of a deep blueiſh black hue; the hind-part of the head is marked with two pale yellow ſpots; and each cheek with a large black ſpot pointing downwards. The interior webs of the ſecondary and quill-feathers are variegated with oval, tranſverſe, reddiſh ſpots; the breaſt is white, marked with oblong ſpots of black; the thighs and vent-feathers are a pale orange; the middle feathers of the tail are entirely of a deep dove-colour, the others being barred on their inner webs with ferruginous, and tipt with a dirty white; and the legs and feet are yellow.

The female is conſiderably larger than the male; her breaſt is marked with higher-coloured ſpots; and her legs are greeniſh. She builds in high trees, in various parts of England; but migrates in October.

HOG. In the Linnæan ſyſtem the Hog forms a diſtinct genus of animals of the order of belluæ and claſs of mammalia; the characters of which are theſe: the upper fore-teeth are four in number, and convergent; thoſe of the lower jaw are ſix, and prominent; the canine teeth of the upper jaw are two, and ſhort; thoſe of the under jaw are ſingle and protruded; and the ſnout is truncated, prominent, and moveable. The Common Hog, the Guinea Hog, the Mexican Muſk Hog or Tagaar, the Capybara, and the Babyrouſſa, belong to this genus.

Hog, Common. The Common Hog is ſo well known, that any deſcription of it may perhaps ſeem unneceſſary; and yet few are acquainted with all the qualities and habitudes of that creature which inquiſitive naturaliſts have remarked.

In animals of the Hog kind, thoſe diſtinctions ſeem to unite by which others are ſeparated. They reſemble the horſe kind in the length of their heads, in having only a ſingle ſtomach, and in the number of their teeth, which amount to forty-four. With reſpect to their cloven hoofs, and the poſition of their inteſtines, they reſemble the cow kind; and in their appetite for fleſh, their numerous progeny, and chewing their cud, they reſemble thoſe of the claw-footed kind.

Thus theſe animals may be conſidered as of a middle nature between the rapacious and the peaceful kinds, nevertheleſs partaking ſomewhat of the nature of both. Like the rapacious tribes, their hoofs, on anatomical inſpection, appear to be fitted with bones, after the manner of beaſts of prey; and the number of their teats ſerves to increaſe the ſimilitude. Like the peaceful kinds, in a natural ſtate, they live on vegetables, and ſeldom ſeek for animal food, except when urged by neceſſity; and, though furniſhed with power ſufficient to annoy the boldeſt animals of the foreſt, they are equally inoffenſive to all.

The Hog is apparently the moſt filthy and impure of all quadrupeds: however, it may be proper to reflect, that filthineſs is an idea merely relative to ourſelves; and that from our own ſenſations we are apt to form a partial judgment, and overlook that wiſe decree of Providence which adapts every part of creation to it's reſpective inhabitants. The Hog, indeed, ſeems actuated with an inſatiable deſire of eating, and therefore his ſtomach is capacious; but though he devours the moſt nauſeous offals, we are not therefore to conclude that he is inſenſible to the difference of food; for whenever he meets with variety, he is known to poſſeſs as diſtinguiſhing a palate as other animals.

This animal has not improperly been compared to the miſer, who during his life-time is uſeleſs and rapacious; but, through the effects of his ſordidneſs, becomes of public benefit at his death. The Hog, in his life-time, does not render the leaſt ſervice to mankind; his uncommon brutality ſometimes urges him even to devour his own offspring. All other domeſtic creatures ſhew ſome degree of reſpect for mankind, and even a ſpecies of tenderneſs for children; but this animal will devour infants when prompted by hunger, and ſeems incapable either of fidelity or affection.

The Hog appears to be more imperfectly formed than any other animals around us which we have rendered domeſtic. It is leſs active in it's motions, and leſs capable of knowing what to purſue and what to avoid. The thickneſs of it's hide, together with the coarſeneſs of it's hair, render it almoſt inſenſible to blows and rough uſage. Being naturally ſtupid, drowſy, and inactive, when undiſturbed it will ſleep half it's time: but it is frequently rouzed by the calls of hunger; and when thoſe demands are ſatisfied, it again retires to reſt. It's whole life ſeems to be one continued round of gluttony and ſleep; and, were it's cravings ſufficiently gratified, it would ſoon become unable to ſupport itſelf on it's legs: nevertheleſs, it would ſtill continue feeding, lying, or kneeling; a helpleſs inſtance of indulged ſenſuality. The only time this creature ſeems to have paſſions of a more active nature, is when it is excited by venery, or when the wind blows with ſome degree of vehemence; on this laſt occaſion, it is ſo agitated, as to run violently towards it's ſty, ſcreaming horribly, as if under the moſt dreadful apprehenſions. It appears alſo to foreſee the approach of bad weather, in carrying ſtraw to it's ſty in it's mouth, preparing a bed, and hiding itſelf from the impending ſtorm. Nor is it leſs afflicted on hearing any of it's kind in diſtreſs; for it ſeems to ſympathize in their ſufferings, and to offer it's unavailing aſſiſtance.

Though the Hog is one of the moſt unpromiſing animals in nature for human induſtry to exert itſelf on, it has been known to profit ſo conſiderably by education, as to perform acts which it's apparent ſtupidity might well have rendered incredible; ſuch as telling the hour of the day by the bare inſpection of a watch; ſelecting ſuch letters as compoſe the largeſt and moſt unuſual names; and producing the figures correſponding with the number of perſons in a room. Such are the aſtoniſhing effects of cultivation, when carried on with aſſiduity and perſeverance.

Moſt of the diſeaſes of this animal ariſe from intemperance; meaſles, impoſthumes, and ſcrophulous ſwellings, being reckoned among the number: and it is actually believed by ſome, that it's propenſity to wallowing in the mire is a natural inſtinct for the deſtruction of a ſpecies of lice or inſects which prey on it. If permitted to live, it will arrive at the age of eighteen or twenty years; and the female will produce till that of fifteen.

As Hogs bring forth from ten to twenty at a litter, they would ſoon become very numerous, were

they not diminiſhed for the ſupport of man. Their fleſh, ſays Linnæus, is wholeſome food for perſons of athletic conſtitutions, or thoſe who habituate themſelves to much exerciſe; but improper for ſuch as lead ſedentary lives: it is, however, of general uſe, and furniſhes innumerable materials for epicuriſm, among which brawn is a kind peculiar to England. In reality, it is an article of great importance to a naval and commercial nation, as it takes ſalt better than any other fleſh, and conſequently is capable of being longer preſerved. The lard, or fat, is extremely beneficial in medicine, being an ingredient in various ſorts of plaiſters; and the briſtles are formed into bruſhes of various ſorts.

The arts of fattening, rearing, guarding, and managing Hogs, more properly fall under the cognizance of the agriculturiſt than the naturaliſt; they conſtitute a branch of domeſtic œconomy, which, properly treated, may be extended to a great length: we ſhall therefore only obſerve, that where art begins, the hiſtory of nature ought to end.

The Hog is found in a domeſtic ſtate in all parts of the world, except within the frigid zones, and in Kamtſchatka. It is alſo found wild in moſt parts of Europe, except the Britiſh Iſles, (where the breed is now extinct) and the countries north of the Baltic. They are very numerous in ſeveral parts of the Eaſt, in Africa, and America; but, both in a ſtate of nature and ſubjection, they are unknown in climates exceſſively ſevere.

Hog, Chinese; the Sus Chinenſis of Linnæus. The belly of this animal reaches almoſt to the ground; the legs are ſhort; the tail depends to the heels; and the body is uſually bare, a peculiarity commonly obſerved in the Aſiatic ſwine.

Hogs of this ſpecies are widely diſſeminated over the Oriental Iſles. They are found wild in vaſt numbers in New Guinea, and the circumjacent iſles: they alſo inhabit Gilolo; and eagerly reſort to thoſe places where ſago-trees have lately been cut down, in order to feed on the remaining pith, which ſoon renders them very fat.

It appears highly probable that this breed of Hogs was carried from New Guinea to the various newly-diſcovered iſlands in the ſouth Pacific. They were firſt introduced into the New Hebrides, and thence into the Friendly Iſles, the Society, and the Marqueſas: but all the iſlands to the eaſtward of New Guinea, and even New Caledonia, a little to the ſouthward, are deſtitute of them.

The fleſh of theſe animals, when fed with plantanes, bread-fruit, and yams, is very delicious; but it is often too groſs for an European ſtomach. Our navigators, however, ſpeak in high terms of the many excellent repaſts they derived from theſe Hogs. In almoſt all the iſlands recently diſcovered, they are ſacrificed to the ſubordinate deities of the country; roaſted whole, placed on their altars, and there left to decay.

Hog, Guinea; the Sus Porcus of Linnæus. This ſpecies is ſmaller than the common kind, though of the ſame figure: the colour is reddiſh; the ears are long and ſharp-pointed; and the tail, which is deſtitute of hair, depends to the heels. It has no briſtles; but about the neck and lower part of the back the hair is longer than on other parts of the body. This creature is a domeſtic variety of the common kind, and it's fleſh is ſaid to be excellent.

The Siam Hog, deſcribed by Buffon under the appellation of Cochon de Siam, is another variety differing very little from the preceding.

Hog, Æthiopian; the Sus Æthiopicus of Linnæus. The body of this animal is longer, and the legs are ſhorter, than in the common ſow. It has ſmall tuſks in the lower jaw, and very large ones in the upper. Thoſe of old boars bend up towards the forehead in a ſemicircular form. It has no fore-teeth; the head is large and broad; the noſe is broad, depreſſed, and corneous; and the mouth is ſmall. The colour of the ſkin is duſky; and the briſtles are diſpoſed in little bunches of about five each: theſe are longeſt on the beginning of the back and between the ears. The ears are large, ſharp-pointed, and internally lined with long whitiſh hairs; and the tail, which is ſmall and flat, is covered with hairs diſpoſed in tufts or bunches, and extends only to the thighs.

Theſe animals inhabit the hotteſt parts of Africa, from Sierra Leona to Congo; and they are alſo found in the Iſle of Madagaſcar. It is likewiſe probable that the Hogs of Mindanao are of this breed, if the deſcription of Dampier may be relied on. They live under ground; and burrow as expeditiouſly as the mole, forming almoſt inſtantly large holes in the ground by means of their callous ſnouts. They are very ſwift and fierce; and cannot be brought to propagate either with the common or Chineſe ſow. One of the Æthiopian Hogs, at the Prince of Orange's Menagery near the Hague, was turned out to a Chineſe ſow, which it killed; and afterwards to a common ſow, which it treated very ſeverely. Indeed, it's ſavage nature at laſt proved fatal to it's keeper; for he died of a wound in one of his legs which this animal, in it's wrath, had inflicted.

Hog, Cape Verd; the Sanglier de Cape Verd of Buffon. This ſpecies has a long head; a ſlender noſe; and ears upright, pointed, and tufted with very long briſtles. It has two cutting-teeth in the upper, and ſix in the lower jaw; ſix grinding-teeth on each ſide in both; and twenty-four in all. The tuſks are large, and of an ivory hardneſs; and thoſe of the upper jaw are thick, and obliquely truncated. The whole body is covered with very long fine briſtles, eſpecially about the belly, ſhoulders, and thighs, where they grow to a great length; and the tail, which is ſlender, and terminates in a large tuft, reaches only to the firſt joint of the leg.

This animal, which is found from the Cape of Good Hope to Cape Verd in Africa, grows to a very conſiderable ſize; and ſeems to be the ſame with the creature ſeen by Adanſon, who calls it a boar of enormous ſize peculiar to Africa.

Hog, Mexican; the Sus Tajacu of Linnæus. This animal, called alſo the Peccary, in ſome degree reſembles a ſmall Hog of the common kind; but it's body is leſs bulky; it's legs are ſmaller; it's briſtles are thicker and ſtronger, and more like thoſe of a hedge-hog than the common kind; and, inſtead of a tail, it is only furniſhed with a fleſhy protuberance, which does not cover it's poſteriors. From the ſhoulders to the breaſt there is a band of white; and on the back a lump reſembling the navel in other animals, from which oozes a very fœtid liquor.

This creature, which is a native of the hotteſt parts of South America, and ſome of the Antilles, lives in foreſts, but chiefly on the mountains: it is leſs corpulent than the common ſow, and neither delights in mire nor marſhy places.

The Mexican Hogs aſſemble in great droves, and

and defend themſelves from beaſts of prey with conduct and reſolution. Their moſt formidable enemy is the jaguar, or American leopard; and the body of that animal is frequently found with ſeveral of theſe Hogs, ſlain in combat. Dogs ſeldom poſſeſs courage enough to attack them; and, if wounded, they will even turn on the human ſpecies, and contend to the laſt. They feed on fruits, vegetables, roots, and reptiles. Their fleſh is ſaid to be tolerable food; but, as ſoon as they are killed, their dorſal glands muſt be extracted, otherwiſe their fleſh immediately becomes tainted; and when this operation is deferred for only half an hour, the infection communicated to their fleſh proves ſo very ſtrong, that it is not eatable, nor even ſupportable.

Theſe animals, though naturally wild, are capable of being tamed; but they never ſhew any ſigns of docility or attachment. They are remarkably fierce in defence of their young; they ſurround the plunderer, attack him with inconceivable fury, and frequently make his life pay the forfeit of his temerity. Like the common Hogs, they are very prolific; and the young follow their dams till they arrive at perfection.

Hog, Indian; the Sus Duobus Dentibus Caninis Fronti Innatis of Linnæus. This animal has ſome weak briſtles along the back; but the reſt of the body is covered with fine ſhort wool, reſembling that of the lamb: the tail ends in a tuft, and is often twiſted; the body is plump and fixed; the head is oblong and narrow; and the ſnout is adapted for digging the earth. The ears are ſmall, erect, and ſharp-pointed; and the eyes are diſproportionably minute. There are four cutting-teeth in the upper, and ſix in the lower jaw, with ſix grinders to each jaw; there are alſo two tuſks in the lower jaw, pointing towards the eyes, and projecting almoſt eight inches out of their ſockets. From two ſockets on the external part of the upper jaw proceed two other teeth, twelve inches long, and bending like horns, the ends of which almoſt touch the forehead.

This curious creature inhabits Buero, a ſmall iſland near Amboyna: it is alſo found in Celebes, but neither on the continent of Aſia nor Africa. It is ſometimes domeſticated in the Indian iſlands. In a wild ſtate, it is a gregarious animal, feeding on vegetables, but never ravaging gardens like other ſwine. When purſued and driven to extremities, it will plunge into the ſea, and ſwim to another iſland. Though furniſhed with very formidable tuſks, they are totally uſeleſs in combat; and are only employed by the animal in ſuſpending it from the bough of ſome tree. The feet reſemble thoſe of the European Hog; and the legs are long and ſlender.

HOG FISH. A freſh-water fiſh about a ſpan long: the colour of the ſcales inclines to a blackiſh green; the fins and tail are of the ſame colour; and the eyes are yellow. It is a native of the Eaſt Indies; and it's fleſh is plump, firm, and agreeable.

HOG, SEA. This fiſh is about fifteen inches in length, and ſeven in breadth. The ſkin is extremely thick; and the ſcales are ſo cloſe and hard, that they are almoſt impenetrable by any inſtrument; but, when boiled, they fall off with eaſe, and the ſkin becomes very ſoft. The fleſh is white, tender, and delicious. The mouth is ſmall, but armed with two rows of ſhining teeth; the back is brown, and furniſhed with a ſharp fin, which the fiſh can erect at pleaſure; and oppoſite to this is another on the belly. The ſides are white mixed with yellow, which gradually turns to an aſh-colour on the back; and the belly is of a ſhining ſilvery whiteneſs.

HOG LOUSE. This inſect is about half an inch in length, and a quarter in breadth. The colour is a livid black, eſpecially when found on dunghills; but ſuch as frequent dry ſituations are cinereous. It has fourteen feet, each having a ſingle joint; and alſo two ſhort feelers. The body is of an oval ſhape; but, when touched, the animal rolls itſelf up into a kind of ball. It is often found among rotten timber, and on decayed trees; and in winter takes up it's lodging in the chinks of walls. The female lays a conſiderable number of white ſhining eggs, which, when firſt hatched, produce a whitiſh ſort of worm, apparently without life or motion.

This inſect is eſteemed very efficacious in medicine: it is preſcribed as diuretic and aperient; and is often given with ſucceſs for dimneſs of ſight.

HOITLALLOTL. An American bird deſcribed by Nieremberg, and by him called Avis Longa. It runs with extraordinary ſwiftneſs. The body and tail are uncommonly long; the beak is alſo very long, black above, and grey beneath; the whole body is of a yellowiſh white colour, except that the ſhoulders are variegated with black and white ſpots, and that the rump is of a blackiſh yellow hue; and the tail, which is green, poſſeſſes all the ſplendor and vivid beauty of the peacock's. The fleſh is almoſt unfit for food.

HOITZITZIL. An appellation given by ſome naturaliſts to the guainumbi, or humming-bird, the ſmalleſt of the feathered tribe.

HOITZITZILLIN. An American bird deſcribed by Nieremberg; the beauty of whoſe feathers is ſo much eſteemed among the Indians, that it is not lawful to kill it, but only to ſtrip it of it's plumage, and then turn it looſe. Hernander informs us, that the natives allure theſe beautiful birds to lime-twigs placed for catching them, by ſtrewing boiled Indian wheat around. They fly in large flocks, neſtle together on trees, and make a confuſed hiſſing noiſe.

HOLIBUT; the Pleuronectes Hippogloſſus of Linnæus. This is the largeſt fiſh of the flounder genus: ſome have been caught in the Britiſh ſeas weighing from two to three hundred pounds; and in thoſe of Newfoundland, Greenland, and Iceland, much larger are found. Indeed, they conſtitute no inconſiderable part of the food of the Greenlanders; being cut into large ſlips, and dried in the ſun.

Theſe fiſh are commonly expoſed to ſale in the London markets, cut into large pieces. Their fleſh is extremely coarſe, except that part which adheres to the lateral fins; and it is fat and delicious, but ſurfeiting. With reſpect to it's length, the Holibut is the narroweſt of any of the genus, except the ſole; and is perfectly ſmooth, and deſtitute of ſpines. The upper part is duſky, and the under of a pure white colour. It is the moſt voracious of all flat fiſh; and has been known even to ſwallow the lead weight at the end of a line with which the ſeamen were ſounding.

HOLOSTEUM. An appellation by which Bellonius diſtinguiſhes the oſtracion, a fiſh caught in the River Nile, covered with a hard ſhelly ſkin, and approaching in it's ſhape to a pentangular figure.

HOLOTHURIA. A genus of ſea-worms of the

the order of molluſca in the Linnæan ſyſtem. Their diſtinguiſhing characters are, a pliable, naked, gibbous body, terminated by the anus at one extremity, and furniſhed at the other with many tentacula encompaſſing the mouth. Linnæus enumerates nine ſpecies.

HOODED SERPENT; the Serpens Indicus Coronatus. This reptile is ſo called from an excreſcence reſembling a hood or cap on the top of it's head. It is generally about a yard long, and three-quarters of an inch thick; and the ſkin is chiefly of a fine vivid yellow colour. The poiſon of this Serpent is extremely ſubtle; and is by ſome reckoned the ſtrongeſt in nature.

HOOPER. An appellation given by ſome authors to the cygnus ferus, or wild ſwan.

HOOPOE; Upupa. This makes a diſtinct genus of birds of the order of picæ in the Linnæan ſyſtem; the characteriſtics of which are theſe: the beak is bent, convex, ſubcompreſſed, and in ſome degree obtuſe; the tongue is obtuſe, triangular, and very ſhort; and the feet are ambulatory. Linnæus has claſſed three ſpecies under this genus; the Upupa Epops, the Promerops, and the Bird of Paradiſe.

Hoopoe, Common; the Upupa Epops. This bird occaſionally viſits the Britiſh iſlands: it is alſo found in various parts of Europe and Africa, and even as remote as Ceylon. The Turks call it Tir Chaous, or the meſſenger-bird; in Sweden it's appearance is vulgarly conſidered as a preſage of war; and it was formerly deemed in our country a forerunner of ſome calamity.

The uſual weight of the Hoopoe is about three ounces: the beak is black, ſlender, and ſlightly hooked; the head is adorned with a moſt beautiful and elegant creſt, riſing two fingers high, and compoſed of two ſeries of feathers, which the bird raiſes and depreſſes at pleaſure: the tips of theſe feathers are ornamented with black and white; and the reſt is of a pale orange-colour. The neck is of a pale reddiſh brown hue; the breaſt and belly are white, variegated with longitudinal ſtreaks, which diſappear in the middle as the bird grows older; the tail is black, and compoſed of ten feathers, having a white ſpot in it of a creſcent ſhape, the horns pointing towards it's extremity; the legs are ſhort and black; and the wings, which are tranſverſely ſtreaked with white, when folded, do not reach to the end of the tail.

The Hoopoe feeds on various inſects, berries, and vegetables; breeds in hollow trees; and lays two aſh-coloured eggs. According to Linnæus, it receives it's name from it's note, which has a ſimilar ſound to the word: but perhaps it may be derived from the French Huppé, Creſted; a peculiarity ſufficient to diſtinguiſh this beautiful bird from all others.

HORN-COOT. A name given by fowlers to the great Horn-owl.

HORN-FISH. An Engliſh appellation for the fiſh more uſually known by that of the gar. It is accounted by ſome authors a ſpecies of the acus, or tobacco-pipe fiſh; but this opinion ſeems to have originated ſolely from a ſimilarity of ſhape. It is properly a ſpecies of pike or eſox.

HORNED FISH. The figure of this fiſh ſomewhat approaches to an oblong ſquare, the back being the narroweſt, and the belly the wideſt part. The body is entirely covered with a thick, ſtrong, horny caſe, fixed, and unpliant; the exterior ſurface is divided by lines into ſexangular portions, with a kind of aſteriſm in the centre of each and the whole body appears of a duſky colour, except the irides, which are orange-coloured. The mouth is ſmall, and the teeth are long and ſlender; from above the eyes project two horns; and from the plane of the belly ſpring two more, tending backwards. A fin riſes on the hinder part of the back, and another on the belly below the vent; and the tail alſo hath a pretty long fin.

This ſingular fiſh is a native of the Oriental ſeas; and has ſometimes been caught on the coaſts of Madagaſcar.

HORNET. This inſect is of the waſp kind, but twice as large. It is furniſhed with four wings, the firſt pair of which is by far the largeſt; and with theſe the creature flies with great velocity. The head is oblong, and yellowiſh; the eyes are prominent and ſemilunated; and between them there are two falciform antennæ. The feet or legs are ſix in number; the ſhoulders are of a dark brown and reddiſh cheſnut-colour; the body is united to the ſhoulders by a ſort of thread; the middle of the fore-part is of a dark brown hue, marked with a ſaffron belt; and the hinder part is wholly of a ſaffron colour, except that it is variegated with eight brown ſpots. Near the belly there are four black ſpots on each ſide; and the tail is armed with a ſtrong venomous ſting.

Theſe inſects, when flying, are more noiſy than waſps, as well as much more miſchievous and dangerous. It is ſaid that a few of them are capable of killing either a man or a horſe; and indeed a ſummer rarely paſſes without affording ſome fatal inſtances of their fury on ſuch as raſhly diſturb them in their retreats. They make their appearance generally about the commencement of the dog-days, during which they are peculiarly malignant. Like bees, they are ſaid to have a ſupreme head; they live in ſocieties, and appear ſubject to ſome regulating power. They are ſeldom known to exiſt above two years. During winter they lie hid, like other inſects, ſometimes in the trunks of hollow trees, and ſometimes at their roots: there they make their neſts, and conſtruct their cells with the mouths always downward, which in a great meaſure preſerves them from the rain. The cells are all ſexangular, and externally ſeem compoſed of films like thoſe of birch-bark. They purſue other winged inſects; and, according to ſome naturaliſts, deſtroy ſmall birds by ſtinging them in their heads, after which they find means to carry them to their neſts. However, they are leſs provident than the more uſeful congenerous inſects the bees, in laying up a ſufficient ſtock of proviſions for the winter; and, in conſequence of this neglect, many of them die through want; which circumſtance providentially keeps the breed from becoming very numerous.

HORNET-FLY. This inſect ſo greatly reſembles the hornet, that an incurious obſerver could ſcarcely diſtinguiſh them. It has two large wings; the principal colour of the body is yellow, with two large tranſverſe black lines; the corſelet is black; and the head is yellow.

At a proper ſeaſon, theſe flies lay a large number of oblong white eggs; which afterwards hatch into large and long worms, that feed on the worms and nymphs of the humble bee.

HORSE. In the Linnæan ſyſtem, the Horſe forms a diſtinct genus of animals of the order of belluæ; the characters of which are theſe: the fore-teeth are ſix in each jaw, the upper being erect

erect and parallel, and the lower more prominent; the canine teeth are ſingle, placed at a diſtance from the reſt, and not much longer; and the hoof is whole and undivided. According to theſe definitions, the equus caballus or Horſe, the aſs, the wild aſs, the mule, and the zebra, are included in the ſame genus.

The Horſe appears to be the moſt beautiful of all quadrupeds: the noble extent of his form, the gloſſy ſmoothneſs of his ſkin, the graceful eaſe of his motions, his ſtrength, and, above all, his activity and utility, render him one of the principal objects of human curioſity and care; and teach us to regard him as an animal in whoſe welfare we are eſſentially intereſted. He is the moſt generous, docile, ſpirited, and yet obedient, of all creatures; adapted for every purpoſe, the chace, the draught, and the race; and produced in almoſt every part of the world, with as little variation as can well be expected. We ſhall therefore give one general deſcription of this noble quadruped, remarking his varieties as we proceed, and explaining his multifarious qualities.

To form an adequate idea of this ſtately animal in his native ſimplicity, we muſt not look for him in the paſtures or the ſtables, to which he has been conſigned by man, but in thoſe wild and extenſive plains where he has been originally produced, where he ranges without controul, and riots in all the variety of luxurious nature. In this happy ſtate of independence, he diſdains the aſſiſtance of man, which only tends to ſervitude. In thoſe boundleſs tracts where he expatiates at liberty, he ſeems not to be incommoded with the inconveniences to which he is obnoxious in Europe. In the happier climates of Africa, the verdure of the fields ſupplies his wants; and the genial warmth of the ſky is well adapted to his conſtitution, which naturally ſeems formed for heat. His enemies are few; for none but the larger kinds of animals will venture to attack him, any one of which he is ſingly able to overcome: but he ſeeks his ſafety in ſociety; and, in thoſe countries, it is not unuſual to ſee five or ſix hundred Horſes feeding together.

As they are naturally mild in their diſpoſitions, they are ſatisfied with remaining entirely on the defenſive. The paſtures ſupply them abundantly with food; and all their precautions are merely for their ſecurity, in caſe of a ſurpriſal. Whenever they ſleep in the foreſts, one of their number performs the office of a centinel, to warn his aſſociates of approaching danger; and this commiſſion they execute by turns. If, while they are feeding by day, any man approaches them, their centinel boldly advances towards him, as if to examine his ſtrength, or to intimidate him from proceeding. If the perſon advances within piſtol-ſhot, the centinel alarms his fellows by a loud kind of ſnorting; on which ſignal they all fly off with the rapidity of the wind, their faithful centinel always bringing up the rear.

Though the Horſe is found in almoſt all countries, it is evident that the colder climates do not agree with his conſtitution; for in them his form is altered, and he is found not only diminutive, but ill-ſhaped. We have the teſtimony of the ancients, that there were wild Horſes once in Europe: at preſent, however, they are totally brought under ſubjection; and even thoſe in America are of Spaniſh original, which being ſent thither on the firſt diſcovery of the country, have ſince become wild, and overſpread all the ſouth of that vaſt continent, almoſt to the Straits of Magellan. Theſe are in general a ſmall breed, of about fourteen hands high: their jaws are thick; their joints are clumſy; and their ears and necks are long. They are tamed with facility; Horſes being naturally gentle, complying creatures, and reſiſting rather from fear than obſtinacy. They are caught by means of a kind of nooſes; and then held faſt by their legs, and tied to trees, where they are left for the ſpace of two days without either food or water. By that time they begin to grow faint, and conſequently become manageable; and, in a few weeks, every trace of their original wildneſs is loſt. If by any accident they are once more ſet at liberty, they never become wild again, but know the voices of their maſters, and obey their calls.

American Horſes, however, cannot properly be ranked among the wild races, being originally bred from ſuch as were tame. We muſt carry our reſearches into the old world for this animal, if deſirous of ſeeing him in a ſtate of nature; in the extenſive deſarts of Africa, in Arabia, and thoſe vaſt countries that ſeparate the more ſouthern nations from Tartary. Large droves of theſe animals are ſeen wild among the Tartars: they are of a ſmall breed, extremely ſwift, and difficult to be caught. As their ſocieties are ſelect, they will not admit of any ſtrange animals among them, though of their own kind; and whenever they perceive a tame Horſe attempting to aſſociate with them, they inſtantly gather round him, and oblige him to provide for his ſafety by flight. To the north of China, there are alſo vaſt numbers of wild Horſes; but they are of a weak and timid breed, ſmall in ſtature, and deſtitute of ſpirit.

About the Cape of Good Hope there are conſiderable numbers of Horſes in a ſtate of nature; but they are ſmall, vicious, and untractable. They are likewiſe found wild in various other parts of Africa; but the wretched inhabitants of that country are either ignorant of their uſes, or unacquainted with the neceſſary arts for taming them. It is uſual for the negroes, who are tranſported from thence to America, when they firſt ſee a Horſe, to expreſs both terror and ſurprize. In ſome parts of Africa, where this creature runs wild, the natives ſeem to conſider him rather as a dainty for food than a uſeful creature, capable of aſſiſting their operations in peace and war; and whenever the Angolans or Caffrarians catch a Horſe, it is only with an intent to feaſt on his fleſh.

But, of all the wild Horſes in the world, Arabia produces the moſt beautiful breed, the moſt generous, ſwift, and perſevering. Though not very numerous, they are nevertheleſs found in the deſarts of that country, and the natives employ every ſtratagem to ſecure them. They are extremely active, but of a ſmaller ſize than thoſe which are bred up tame: their colour is brown; their manes and tails are very ſhort, and the hair is black and tufted. No adequate ideas can be formed of their fleetneſs; and the only method of catching them is by traps concealed in the ſand, which entangling their feet, the hunters at length come up, and either kill or carry them off alive. If the Horſe be young and tender, the Arabians conſider him as a peculiar delicacy; but if, from his ſhape and vigour, he promiſes to be ſerviceable in his more noble capacity, they tame him by fatigue and hunger, and he ſoon becomes an uſeful domeſtic animal. The natives uſually try the ſwiftneſs of their Horſes by hunting the oſtrich,

they being the only animals whoſe ſpeed is comparable to that of this bird. The inſtant the oſtrich perceives itſelf aimed at, it makes for the mountains; while the horſeman purſues it with all poſſible expedition, and endeavours to cut off it's retreat. This being effected, the chace is continued along the plain; while the oſtrich makes uſe both of it's legs and wings to accelerate it's progreſs. However, the Horſe is frequently able to outrun it; and in that caſe the poor bird is obliged to have recourſe to art for eluding the hunter, by making uſe of frequent gyrations: at laſt, finding all it's efforts ineffectual, it hides it's head in the ſand, or wherever it can, and patiently ſuffers itſelf to be taken. If the Horſe, in a trial of this kind, ſhews a ſufficient degree of fleetneſs and ſtrength, his price becomes proportionably great; and ſome that have acquitted themſelves with credit, have been valued at a thouſand guineas.

At preſent, however, the Horſes thus caught and trained are but few: the value of Arabian Horſes in every part of the world has thinned the deſarts of the wild breed; and there are very few to be found in thoſe countries, except ſuch as are tame. Hiſtorians inform us, that the Arabians firſt began the management of Horſes in the time of Sheque Iſmael. Before that period, theſe animals wandered wild along the face of the country, neglected, and uſeleſs; but the natives then firſt tamed their fierceneſs, and improved their beauty: and at preſent they poſſeſs a race of the moſt elegant Horſes in the world, with which they drive a conſiderable trade, and furniſh the ſtables of princes at immenſe prices.

There is ſcarce an Arabian, however poor in other reſpects, who is not furniſhed with his Horſe. In general, theſe people make uſe of mares in their ordinary excurſions; being taught by experience, that they endure hunger, thirſt, and fatigue, better than Horſes: they are alſo leſs vicious, of a gentler nature, and more harmleſs among themſelves. The Turks, on the contrary, are not fond of mares; and the Arabs ſell them ſuch Horſes as they do not think proper to keep for ſtallions.

The Arabians preſerve the pedigrees of their Horſes with great care, and trace them for ſeveral ages. They know their alliances, and their entire genealogy. They diſtinguiſh the races by different names, and divide them into three claſſes: the firſt is that of the nobles, or the ancient breed, unadulterated on either ſide; the ſecond is that of the Horſes of the ancient race, but adulterated; and the third is that of the common and inferior kind. The laſt are ſold at a very moderate price; but thoſe of the firſt claſs, and even the ſecond, extremely dear.

Taught by long experience, the Arabians know the race of a Horſe by his appearance; and can tell the name, ſurname, colour, and marks, properly belonging to each. When a mare is covered, the owner receives a written atteſtation of the fact: and when ſhe has produced her foal, new witneſſes are called; and a new atteſtation is ſigned, in which are deſcribed the marks of the foal, and the day is entered when it was brought forth. Theſe teſtimonies increaſe the value of the Horſe, and are conſigned to the perſon who purchaſes him. The moſt ordinary mare of the noble breed ſells for five hundred crowns; many are valued at a thouſand; and ſome of the very fineſt kinds are eſtimated at no leſs a ſum than fifteen hundred pounds ſterling.

The Arabians having no other habitation but a tent, that alſo ſerves them for a ſtable; ſo that the huſband, the wife, the children, the mare, and the foal, live indiſcriminately together: the little children frequently lie on the body, or on the neck, of the mare; whilſt ſhe ſeems fond of their careſſes, and never offers to hurt them. The Arabians never beat their horſes, but treat them with great gentleneſs; addreſs them as if rational beings; and never attempt to increaſe their ſpeed by the whip or ſpur, except in caſes of neceſſity: however, when either of theſe is applied, they ſet off with amazing fleetneſs, leaping over every obſtacle with as much agility as a buck; and ſhould their riders happen to be diſmounted, they ſtand ſtill in the midſt of their moſt rapid career.

The Arabian Horſes are of a middle ſize, eaſy in their motions, and rather inclined to leanneſs than obeſity. They are regularly dreſſed every morning and evening; and with ſo much care, that the ſmalleſt aſperities or inequalities are not to be ſeen on their ſkins. During the day, they are kept from food, receiving only a little water; but about ſun-ſet, bags are ſuſpended from their heads, each containing nearly half a buſhel of clean barley: this they eat in the courſe of the night, and the bags are removed again in the morning. In the beginning of March, when the graſs is of a ſufficient height, they are turned out to paſture; and about this time likewiſe the mares are conſigned to ſtallions. When the ſpring is at an end, they are taken from paſture, and ſubſiſted the remainder of the year on barley, except now and then a little ſtraw. At the age of two years, or two and a half at moſt, they are accuſtomed to the menage; and are then always kept ready ſaddled at the doors of the tents from morning till night, in order to be prepared againſt any ſurprize.

Senſible of the great advantages derived from their Horſes, the Arabians have a law which prohibits the exportation of their mares; and thoſe ſtallions which are imported into England, are generally purchaſed on the eaſtern ſhores of Africa, and come round by the Cape of Good Hope. They are commonly about fourteen hands and a half high; their motions are more graceful than thoſe of our Horſes; and they are alſo ſuperior in fleetneſs; but their ſpeed is irregular, and they are incapable of bearing long fatigue: nevertheleſs, they are juſtly conſidered as the fineſt breed in the world, and as that from which all others have derived their moſt valuable qualifications. It is even probable that Horſes had their origin firſt in Arabia; for there, inſtead of croſſing the breed, they are ſtudious to preſerve it entire. In other countries it is neceſſary to change the races, otherwiſe the Horſes would ſoon degenerate; but, in Arabia, the ſame blood has paſſed down through a long ſucceſſion, without any diminution either of beauty or ſtrength.

The Arabian breed has ſpread over all Barbary, and has even extended itſelf acroſs that vaſt continent to the weſtern ſhores of Africa. It has alſo been diffuſed into Egypt; and even into Perſia, where, according to Paulus Jovius, there are ſtuds of ten thouſand white mares all together, which are very fleet, and their hoofs ſo hard, as not to ſtand in need of ſhoeing, In theſe countries, Horſes generally receive the ſame treatment as in Arabia, except that they are littered in bags of their own dung, dried in the ſun, and then pulverized. When this dung, which is ſpread under the Horſe

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about five inches thick, is moiſtened, it is again dried, and ſpread as before. Theſe Horſes, which ſtrongly reſemble each other, are uſually of a ſlender make; their legs are fine, bony, and wide ſet; their manes are thin; their cheſts are fine; their heads are beautiful; their ears are ſmall and pointed; their ſhoulders are thin; their ſides are elegantly rounded; their crops are ſomewhat longiſh; and their tails are generally ſet high. In Numidia, however, the race of Horſes is much degenerated; the natives having been diſcouraged from keeping up the breed by the Turks, who ſeize on all the good Horſes, without making their owners the leaſt compenſation. The Tingitanians and Egyptians are now famed for rearing the fineſt Horſes, both with reſpect to beauty and ſize. The ſmalleſt of the Egyptian breed are about ſixteen hands high; and their ſymmetry is the moſt exact in nature.

The Spaniſh genette is generally ranked next to the barb. Theſe Horſes are ſmall, but extremely beautiful and fleet. Their heads are pretty large; their manes are thick; their ears are long, but well pointed; their eyes are animated and lively; their ſhoulders are thickiſh; their cheſts are full and large; their croups are round and large; their legs are beautiful, and without hair; their paſterns are a little of the longeſt; and their hoofs are ſomewhat too high: nevertheleſs, they move with great eaſe, and carry themſelves very gracefully. They are uſually of a black, or dark bay colour, without any white marks; and they are all branded on their buttocks with their owners names. Thoſe of the province of Andaluſia are eſteemed the beſt: they are ſaid to poſſeſs courage, obedience, grace, and ſpirit, in a very ſuperior degree; and have therefore been preferred, as War-Horſes, to thoſe of any other country.

The Italian Horſes are now leſs beautiful than formerly, the breed having been greatly neglected. Nevertheleſs, there are ſtill ſome beautiful Horſes in that country, particularly among the Neapolitans, who uſe them chiefly for draught. In general, they have large heads and thick necks; are reſtive, and conſequently ungovernable: theſe faults, however, are recompenſed by the largeneſs of their ſize, their ſpirit, and their graceful, eaſy paces. They have a particular aptitude for prancing, and are excellent for ſhew.

The Horſes of Denmark are of a large, ſtrong make, and therefore preferable to all others for the draught. Some of them are well ſhaped; but in general they have thick necks, heavy ſhoulders, long hollow backs, and narrow croups; however, they all move with eaſe, and are found to be well adapted either for parade or war. They poſſeſs all manner of colours, and often very whimſical ones; ſome of them being mottled like the leopard, and others ſtreaked like the tiger.

The German Horſes, though originally ſprung from Arabian and Barbary ſtocks, are nevertheleſs ſmall and ill-ſhaped; their hoofs are tender; and they are weak, and apt to be jaded. The Hungarian Horſes, on the contrary, are excellent both for the draught and ſaddle; and, when applied to the purpoſes of war, their noſtrils are uſually ſlit, deſignedly, as we are informed, to prevent their neighing.

No Horſes are preferable to thoſe of the Dutch for the draught; and for this purpoſe they are eſteemed over all Europe. The province of Frieſland produces the beſt. The Flemiſh Horſes are much inferior to the former, having commonly large heads, flat feet, and ſwollen legs.

France produces a very motley breed of Horſes, but few that are valuable. The beſt of that country come from Limoſin: theſe bear a ſtrong reſemblance to barbs; and, like them, are excellent for the chace, though a long time in arriving at perfection; while young, they muſt be conducted with great care, and are not backed till eight years of age. Normandy alſo furniſhes ſome good Horſes, though they are better adapted for war than the chace. French Horſes are uſually heavy-ſhouldered; a fault oppoſite to that of the barbs, which are commonly too thin in their ſhoulders, and conſequently apt to be ſhoulder-ſlipt.

By great aſſiduity, and unceaſing application, the Engliſh Horſes are now become ſuperior to thoſe of any other part of the world, for ſize, ſtrength, beauty, and fleetneſs. In this iſland, indeed, the breed of theſe creatures is as mixed as that of it's inhabitants. From the frequent introduction of foreign Horſes, we can boaſt of a greater variety than any other country: few other kingdoms produce more than one kind; but ours, by a judicious mixture of the ſeveral ſpecies, by the happy diverſity of our ſoil, and by our ſuperior ſkill in management, may triumph over the reſt of Europe in having brought this noble animal to the higheſt degree of perfection. The Engliſh Horſe is at preſent known and allowed to excel the Arabian both in ſize and ſwiftneſs, to be more durable than the barb, and more hardy than the Perſian. To ſuch amazing fleetneſs have ſome of theſe animals arrived, that they have run a mile in little more than a minute, and frequently performed a race of four miles in leſs than ſeven minutes. However, this ſuperior degree of ſwiftneſs is applicable only to ſome particular Horſes; for the generality fall conſiderably ſhort of it, notwithſtanding the eaſy victory they gain over other European courſers.

Theſe fleet Horſes derive their origin from Arabia, the ſeat of the pureſt and moſt generous breeds. The hunter is a happy combination of the former with others of ſuperior ſtrength, but inferior in ſwiftneſs and lineage: this, in fact, is a neceſſary union; for the fatigues of the chace require the ſpirit of the one, as well as the vigour of the other, to ſupport it.

No other country can produce a breed of Horſes equal in ſtrength and ſize to thoſe of England which are deſtined for the draught, or the combined ſtrength and activity of thoſe that compoſe our cavalry. In the metropolis, there are inſtances of a ſingle Horſe being capable of drawing, for a ſmall ſpace, three tuns weight; but which could eaſily draw half that weight for a continuance. It has been uſual for one of the Yorkſhire Pack-Horſes to carry a burden of four hundred and twenty pounds weight over the higheſt hills of the north, as well as along the moſt level roads. Some of our Mill-Horſes will carry, at one load, thirteen meaſures, which, at a moderate computation of ſeventy pounds each, will amount to upwards of nine hundred pounds. However, when it is conſidered that the animals are habituated to ſupport theſe amazing weights by degrees, and that the ſpaces they travel are but ſhort, the taſk will appear leſs ſurprizing.

The increaſe of population, the extenſion of manufactures, together with the neglect of internal navigation, have occaſioned the number of our

Horſes to be multiplied; an exceſs of wealth has increaſed the number of carriages, and added to the neceſſity of an extraordinary culture of theſe quadrupeds; and the reputation they have acquired on the continent has alſo made them a branch of commerce, and proved an additional ſtimulus to their propagation.

The French, and ſome other nations, in their deſcription of our Horſes, though they admit that they are ſtrong and ſpirited, find fault with the aukwardneſs of their motions, and their want of grace and elegance. But while they venture thoſe ſtrictures, they do not reflect, that this ſeeming want of grace is entirely the reſult of our manner of breaking theſe animals; and that the defect is not natural, but adventitious. Speed is a quality principally conſulted by us in the motions of this animal; but the French, and other continental nations, pay more attention to parade and ſpirit. We always throw our Horſes forward, while they put them on their haunches; we teach them an eaſy method of going, ſo as to cover a great deal of ground: on the contrary, they throw them back; which circumſtance, while it contributes to ſhew, unqueſtionably leſſens utility. From our manner of breaking the Horſe, it muſt be acknowledged that the animal is ſometimes apt to fall forward; while the French menaged Horſe never falls forward, but generally on one ſide. However, it would certainly be no difficult taſk to give our Horſes all that grace which foreigners ſo much admire; though at the ſame time it would render them leſs ſwift and durable.

But whatever contempt foreigners might formerly have expreſſed for our Horſes, they are now ſufficiently convinced of their error, and have accordingly altered their opinion. Engliſh hunters are now conſidered as the moſt uſeful Horſes in the world: numbers of our geldings are exported to the continent, and ſold at very high prices, notwithſtanding a law prohibiting their exportation, which, with ſome variation, has been in force ever ſince the time of King Athelſtan.

Roger de Belegme, created Earl of Shrewſbury by William the Conqueror, is the firſt who is recorded to have attempted improving our native breed of Horſes. This nobleman introduced Spaniſh ſtallions into his eſtate at Powiſland, in Wales; from which circumſtance that part of the country was for many ages after famous for a ſwift and generous breed of Horſes. However, at that early period, ſtrength and fleetneſs were more regarded than beauty; the ſhape of the Horſes, during the time of action, being entirely hid by coats of armour, with which the knights inveſted them, either for ornament or defence.

In the reign of King Stephen, the number of Horſes, in London alone, is ſaid to have amounted to twenty thouſand: but, in the reign of Queen Elizabeth, the whole kingdom could not ſupply two thouſand to form a body of cavalry. At preſent, the former numbers ſeem to be revived, and even augmented; and, in time of war, thirteen thouſand horſemen have been fitted out, without any ſenſible decreaſe of the breed.

We are informed that there are very good Horſes in the iſlands of the Archipelago. Thoſe of Crete were in high eſtimation among the ancients, for their ſtrength and ſwiftneſs: at preſent, however, they are but little uſed even there, the country being rocky, mountainous, and irregular.

The original Horſes of Morocco are much inferior in ſize to the Arabian breed, but they are very fleet and vigorous. Turky produces Horſes of almoſt every race; Arabians, Tartars, Hungarians, and the aborigines of the country. The latter, which are extremely beautiful and elegant, poſſeſs a great deal of fire, ſwiftneſs, and docility; but they are incapable of bearing long-continued fatigue.

The Perſian Horſes are, in general, the moſt beautiful and valuable in all the Eaſt. The paſtures in the plains of Media, Perſepolis, Ardebil, and Derbent, are well adapted for rearing them; and their propagation was formerly encouraged by the government. They are generally of a middle ſize; and though ſome are found of the ſmalleſt ſtature, that circumſtance does by no means either impair their beauty or their ſtrength. Nevertheleſs, many of them are as large as the Engliſh Saddle-Horſes: they have all thin heads, fine creſts, narrow breaſts, ſmall ears, fine legs, hard hoofs, and elegantly-turned croups; they are docile, ſpirited, nimble, hardy, courageous, and capable of ſupporting the greateſt fatigue. Great numbers of theſe are annually tranſported into Turky, but more into the Eaſt Indies: however, all travellers agree, that they are not comparable to the Arabian Horſes, either for courage, ſtrength, or beauty.

The Horſes of India are of a very indifferen kind. Thoſe uſed by the grandees up the country are brought from Arabia and Perſia; they are ſparingly fed with hay in the day-time; and at night with boiled peas mixed with ſugar and butter: this kind of food, which appears to be very nutritive, aſſiſts them in bearing up againſt the almoſt intolerable heat of the climate. Thoſe Horſes naturally belonging to the country are very ſmall and vicious. Taverner ſays they are ſo very little, that the young Mogul prince, when only ſeven years of age, rode one of them whoſe ſize ſcarcely exceeded that of a greyhound: and one of them was lately brought over to this country, as a preſent for the Queen, which was only about nine hands high, and very little larger than a common maſtiff.

Indeed, it is highly probable that the extremes of heat and cold are equally inimical to this noble animal. The Horſes of the Gold Coaſt, and of Guinea, as well as thoſe of India, are extremely ſmall, but docile. In Guinea, it is a common exerciſe with the grandees of that country, who are excellent horſemen, to dart out their lances before them when on full gallop, and to catch them again before they reach the ground. They have alſo a paſtime on horſeback, (requiring much dexterity on the part of the rider, and a great ſhare of activity on that of the Horſe,) which conſiſts in ſtriking of a ball with a battledore, while on a full gallop, and following it with ſuch ſpeed as to hit it again before it comes to the ground; and this they ſometimes repeat for the ſpace of a mile with amazing agility.

The Chineſe Horſes are ſcarcely ſuperior to thoſe of India, being ſmall, feeble, ill-proportioned, and timid. Thoſe of Corea are not above three feet high; and ſo very timorous, that they cannot be trained to the arts of war. It may therefore be juſtly ſaid, that the Tartarian Horſes were, in reality, the conquerors of China. They are, indeed, extremely ſerviceable in war; and, though of a moderate ſize, ſurprizingly patient, vigorous, bold, and ſwift. The Tartars and their Horſes live together almoſt after the ſame manner as the Arabians:

Arabians: they begin to back them when only about ſeven or eight months old, placing their children on them, who eaſily manage them at that early age. Thus they break them by degrees; till at laſt, when they are about ſix or ſeven years old, they are able to endure the greateſt hardſhips: ſome of them have been known to march two or three days without ever halting; and to be without any provender for five or ſix, except a handful of graſs every eight hours; and, beſides, to abſtain from drinking for twenty-four hours together. Theſe Horſes, however, loſe all their ſtrength when introduced into China or the Indies; but they ſeem rather to improve in Turky and Perſia.

There are alſo fine Horſes in Mingrelia and Circaſſia; and ſome which are highly valued in the Ukraine, Wallachia, Poland, and Sweden: but of ſuch we have no particular account.

If we conſult the ancients reſpecting the nature and qualities of Horſes of different countries, we ſhall find that the Grecian, and particularly the Theſſalian, were reputed excellent for warlike purpoſes; that thoſe of Achaia were remarkable for their ſize; that the moſt beautiful came from Egypt, and were alſo extremely prolific; that the Horſes of Ethiopia were of but ſmall eſtimation; that Arabia and Africa furniſhed very beautiful ſteeds, and well adapted for the courſe; that thoſe of Italy, and particularly of Apulia, were very good; that the Horſes of Sicily, Cappadocia, Syria, Armenia, Media, and Perſia, were equally eſteemed for their fleetneſs and vigour; that the Sardinian and Corſican Horſes, though ſmall, were ſpirited and courageous; that thoſe of Spain reſembled the Parthian in being well adapted for war; that in Wallachia and Tranſylvania, there were Horſes with buſhy tails, and manes pendent to the ground, which were extremely ſwift and active; that the Daniſh Horſes were excellent leapers; that thoſe of Scandinavia were ſmall, but well-ſhaped and active; that the Flanders breed was ſtrong; that the Gallic Horſes were very uſeful in carrying burdens; that thoſe of Germany were diminutive, ill-ſhaped, and unſerviceable; that the Swiſs and Hungarian Horſes were valuable; and, finally, that thoſe of India were very diminutive, feeble, and timid.

Such are the different accounts of the diſtinct races of Horſes in various parts of the world, both in ancient and modern times: but, reſpecting animals ſo intimately connected with man, and ſo immediately under his care, nothing can be advanced which is applicable to all times and climates. According to the degree of cultivation beſtowed on them, Horſes either improve or degenerate: their qualities of ſagacity and docility alone remain inherent; and theſe neither change of climate nor diverſity of management is able to obliterate.

Though Horſes are endowed with amazing ſtrength, they ſeldom exert it to the prejudice of their maſters: on the contrary, they endure the greateſt fatigue for their benefit. They poſſeſs benevolent diſpoſitions; and a dread of the human race, together with a certain conſciouſneſs of the ſervices they are capable of rendering them.

Hooſed quadrupeds are in general domeſtic, neceſſity compelling them to ſolicit our protection. Wild animals are furniſhed with feet and claws adapted to the formation of dens and retreats from the inclemencies of the weather; but the former are obliged to have recourſe to man for artificial ſhelter, as nature, in all climates, does not ſupply them with neceſſary food throughout the whole year.

Providence, which has wiſely adapted the ſeveral ſervices of domeſtic animals to the benefit of the human race, has alſo ordained, that the parts of ſuch as have been moſt uſeful during their lives, ſhould contribute the leaſt to our benefit after death. The ſkin of the Horſe is of but little value; his fleſh is totally unfit for food; and no part of him is eſſential either in medicine or manufacture.

The Horſe, as being a martial animal, was dedicated to Mars. The Perſians, Armenians, and Maſſagetæ, ſacrificed Horſes to the Sun. The Suevi, an ancient people of Germany, according to Tacitus, maintained white Horſes in the ſacred woods at the public charge, and from them drew omens. The ſight of a Horſe was generally conſidered as a prognoſtic of war. Æneas had ſcarcely landed in Italy, before he ſaw four white Horſes feeding in a meadow; on which Anchiſes immediately exclaimed—'O foreign land, thou menaceſt war againſt us!'

The definitions of a perfect Horſe, as quaintly penned by Camerarius, run thus: 'It muſt,' ſays he, 'have three parts like thoſe of a woman; the breaſt muſt be broad, the hips round, and the mane long. It muſt in three reſpects reſemble a lion; it's countenance muſt be fierce, it's courage muſt be great, and it's fury irreſiſtible. It muſt have three qualities belonging to the ſheep; the noſe, gentleneſs, and patience. It muſt have three of a deer; head, leg, and ſkin. It muſt have three of a wolf; throat, neck, and hearing. It muſt have three of a fox; ear, tail, and trot. It muſt have three of a ſerpent; memory, ſight, and flexibility. And, laſtly, three of a hare, running, walking, and perſeverance.'

HORSE-WORM. A ſpecies of fly-worm, called alſo Bott, produced from eggs depoſited by a two-winged fly, of the ſhape and ſize of the humble bee, in the inteſtines of horſes.

Worms in the human viſcera have not been longer known to the world than thoſe in horſes; and farriers of every age have had their remedies for the long Worms bred in their inteſtines, and alſo for the ſhort ones. The ſhort ones are the animals now under conſideration. But though mankind have been ſo long acquainted with their exiſtence, they knew not their origin till Valliſnieri diſcovered that they were produced from the humble-bee flies: theſe flies always frequent the open fields, and are never found about towns and houſes; for which reaſon thoſe horſes which are kept in ſtables during ſummer and autumn, are never infeſted by theſe Worms.

About the latter end of ſummer, theſe inſects, ſo inimical to horſes, are ſeen buzzing about their backs in the open fields, watching for an opportunity of depoſiting their eggs where nature has taught them to perform this operation: and Horſes, at this ſeaſon, are extremely ſenſible of the buſineſs in which theſe little annoyers are engaged; for they jump about, kick, and run, at the very ſound of their wings.

Theſe flies frequently ſettle under the tail of the horſe; and, by means of ſome gentle titillation, occaſion the animal to open it's fundament a little: this they no ſooner perceive, than they enter, and immediately lay their eggs. The Worms hatched from theſe eggs, or perhaps living Worms there

depoſited if the fly is of the viviparous kind, ſoon find their way farther up the inteſtines, and often penetrate even into the ſtomach. After theſe Worms have had ſufficient time to arrive at their deſtined growth, they naturally quit their abode; and, advancing towards the lower parts of the inteſtines, are either voided with the dung of the horſe, or crawl out ſpontaneouſly.

The figure of theſe Worms does not preſent us with any thing ſingular. They are ſomewhat of a conic ſhape, their heads being pointed, and their poſteriors broad. They are of different colours, ſome being greeniſh, others yellowiſh, and ſome brown. They are each provided with two cruſtaceous hooks, by which they lay hold of any ſubſtance, and ſo move themſelves along; and this prevents their being forced out with the excrements of the animal.

When there is only a ſmall quantity of theſe Worms lodged in the viſcera of a horſe, they ſeldom prove injurious to his health: but they ſometimes encreaſe ſo prodigiouſly, as to bring on the moſt dreadful diſtempers; and, in ſome years, when numbers of horſes have died of an epidemic malady, on opening their inteſtines, vaſt multitudes of theſe inſects have been found alive in their ſtomachs, each having eat itſelf a ſort of cell in the membrane of the ſtomach, and all being lodged there together as cloſe as the ſeeds in a pomegranate.

When theſe Worms naturally quit their original abodes, they crawl about till they find ſome place of ſecurity, where they form ſhells of their ſkins; and, after paſſing through all their various tranſformations, attain their laſt and moſt perfect ſtate.

As a cure for Worms in horſes, clyſters of oil are generally preſcribed; but this mode of treatment is probably inefficacious, as oil, though it may increaſe the lubricity of the parts, and tend to deprive ſome of the inſects of their hold, is certainly not fatal to the exiſtence of one individual.

HORSEMAN. An appellation given to a bird about the ſize of the pigeon, called by the French Chevalier. See CHEVALIER.

HOTAMBÆIA. A ſpecies of ſerpent found in the Eaſt Indies, of a greyiſh yellow colour, and a very fœtid ſmell.

HOTTENTOT FISH. This fiſh is ſo called becauſe the Dutch firſt purchaſed ſome of them from the Hottentots. There are two or three varieties of them; one of which has it's back and ſides of a blackiſh colour, and it's head of a dark purple. Another variety is of a deep blue, and ſeems to be ſpotted. The firſt ſort is ſomewhat rounder, broader, and ſhorter, than the ſecond. It weighs about a pound, and is ſeven or eight inches long.

Theſe fiſh feed on ſea-weeds, and any offals that happen to be thrown into the water. The Hottentots catch them with angles, whiſtling and making a great deal of noiſe at the ſame time; and imagine that this device induces them to bite the ſooner. Their fleſh is wholeſome and well taſted; and, when the fiſhermen cannot diſpoſe of it freſh, it is ſalted and dried in the ſun, and ſold to ſuch mariners as happen to touch on the coaſt.

HOUND. Hounds may be diſtinguiſhed, with regard to their manner of hunting, into ſuch as diſcover and purſue the game by ſight, and the quickneſs and ſwiftneſs of their motions; of which kind are the Gaze-Hound, the Grey-Hound, and the Terrier: and thoſe which find and purſue the game by the excellence of their ſcent; of which there are ſeveral varieties. See DOG.

HOUND-FISH. An appellation given to two different fiſhes of the ſqualus genus; one diſtinguiſhed by the name of the ſmooth, and the other by that of the prickly Hound. See GALEUS LÆVIS, and GALEUS SPINAX.

Willughby, and ichthyologiſts in general, mention another ſpecies of Hound-Fiſh, called the Starred Hound, or Galeus Aſterias; but Artedi conſiders this only as a variety of the Smooth Hound-Fiſh.

Another ſpecies is likewiſe mentioned by ſome naturaliſts, called the Rough Hound-Fiſh, or Morgray, the Peſce Gotto of the Italians, and the Catulus Minor of claſſical writers: however, Artedi diſtinguiſhes it from the other ſpecies only by the appellation of the ſqualus with a variegated back and the ventral fins concreted. See CATULUS and SQUALUS.

HOWLET. A bird of the owl kind, ſo called from it's mournful, howling voice. It is as large as the pullet, and meaſures eighteen inches to the extremity of the tail. The head, back, wings, and tail, are cinereous, ſpeckled with white and black ſpots; the head is large, round, and thick of feathers; and the wings reach to the extremity of the tail.

HOWLET OF GESNER. This variety is larger than the hen; the colour is a mixture of red and black; between the eyes and on the back there are ſome cinereous feathers; and the legs are whitiſh with livid-coloured ſpots.

HUBARI. The name of a bird frequently mentioned by Arabian authors; and deſcribed as being ſomewhat larger than the gooſe, with very ſhort wings in proportion to it's bulk. It is ſaid to be common round Damaſcus, and to afford much diverſion to the Syrian fowlers. It is probably of the buſtard kind; but we are not furniſhed with accounts ſufficiently explicit to pronounce with certainty on this ſubject.

HUCK. An appellation ſometimes given to the German river-trout. It bears a ſtrong reſemblance to the common trout in ſhape, but it's back is covered with an infinite number of black ſpots. It's ſides, which are red, contain a few black ſpots; it's under-jaw has alſo ſome ſpots; but the reſt of it's head is entirely of one colour.

HUITINGO POLLACHIUS. A name ſometimes given to the fiſh commonly known in England under the appellation of the whiting pollack. It nearly reſembles the whiting in ſhape, but is much larger, broader, and thinner; and it is diſtinguiſhed from the cod by the ſmallneſs of it's head, the broadneſs of it's body, and being deſtitute of a beard. This fiſh, which is common in the northern ſeas, is much eſteemed for the table.

HUMBLE BEE FLY. A claſs of Flies comprehending various ſpecies of different ſizes, but all agreeing in the great reſemblance they bear to the Humble Bees of the ſmaller or middle-ſized kinds. At firſt view, they might naturally enough paſs for real Humble Bees; but, on a cloſer examination, it will appear that they are deſtitute of trunks, and furniſhed with only two wings: however, the ſpecies of the Humble Bee Fly are many of them different genera from each other, ſome of them having trunks, and others diſtinguiſhable mouths.

Nature has aſſigned the worms produced from theſe Flies a very ſingular habitation: they are lodged in the inteſtines of horſes, or under the thick and firm ſkins of oxen. In the latter caſe, the worm hatched from the egg of it's parent Fly, depoſited there, forms a tumour which furniſhes it with

with food and habitation; and in the middle there is an aperture for the purpoſe of reſpiration.

However, nature has not invariably decreed that all the worms of the Humble Bee Flies ſhould feed on animal ſubſtances; for we find ſome delighted with vegetable food, and particularly one ſpecies that ſhews a ſtrong predilection for the bulbous roots of flowers.

HUMISUGA. An appellation given to a ſpecies of fly, from it's ſuppoſed quality of ſubſiſting on the juices of the earth, without taking in any ſolid food. It's body is browniſh, or dun-coloured; there is a white ſpot at the inſertion of the wings, and another on the head; the legs are black; the back is marked with four dull white longitudinal lines; and the wings, which exhibit a luminous appearance when put into water, are of a ſilvery whiteneſs. This inſect is common about pathways, on mole-hills, and in other places where the ground has been recently ſtirred.

HUMMING-BIRD. A very beautiful genus of American birds; the diſtinguiſhing characters of which are, that the beak is of a ſubulated figure and as fine as a thread, longer than the head, and terminating in a fine tube or pipe, the upper mandible forming a kind of ſheath for the lower; that the tongue is filiform, and rendered tubular by the junction of two threads; and that the feet are formed for walking.

Linnæus enumerates twenty-two ſpecies of this genus, from the ſize of a ſmall wren down to that of a humble-bee: and an European might be tempted to believe a bird ſo extremely minute as not to exceed a common bee in magnitude, to be a creature of the imagination only, were it not as frequently ſeen in America as butterflies in ſummer, ſporting among the flowers, and extracting their ſweets with it's little bill.

It is almoſt inconceivable how much theſe numerous, minute tribes, add to the high finiſhing and beauty of a rich luxurious Tranſatlantic landſcape. As ſoon as the ſun is riſen, Humming-Birds of different kinds are ſeen fluttering about the flowers, without ever ſettling on them. Their wings are in ſuch rapid motion, that it is impoſſible to diſcern their colours but by their effulgence. They are inceſſantly ſhifting from flower to flower, and drawing out their mellifluous juices: for this purpoſe they are furniſhed with forked tongues, which entering the cups of the flowers, extract their nectareous ſtores, the ſole ſubſiſtence of theſe animals. The quick movement of their wings produces a kind of humming noiſe; and from this circumſtance they derive their name.

Theſe birds build their neſts after a very ſingular manner: they ſuſpend them from the extremities of twigs of the orange, the pomegranate, or the citron-tree; and ſometimes even from the houſes of the natives, provided they can find convenient twigs for that purpoſe. The female performs the office of an architect; while the male goes in queſt of materials, ſuch as cotton, fine moſs, and the fibres of vegetables: of theſe ſubſtances a ſmall neſt is compoſed, admirably contrived, and warmly lined with cotton; in which the hen lays two eggs, each about the ſize of a ſmall pea, and as white as ſnow, except a few brown ſpecks. The male and the female perform the buſineſs of incubation by turns: but the latter appropriates to herſelf the greateſt ſhare of attention; ſhe ſeldom quits her eggs, except for a few minutes in the morning; and again in the evening, when the flowers are covered with the choiceſt dews. During this ſhort interval the male takes her place; for as the eggs are ſo very ſmall, if they were at all expoſed to the weather, their contents would probably be injured.

The ſeaſon of incubation continues twelve days; at the expiration of which the young brood appear, each nearly about the ſize of a blue-bottle fly: at firſt they are quite naked; by degrees they become covered with down; and at laſt feathers ſucceed, but much leſs beautiful than thoſe which appear after the firſt molting.

Father Labat informs us, that one of his aſſociates in the miſſion to America found a neſt of young Humming-Birds in a ſhed near his dwelling-houſe, which he took in at a time when they were about fifteen or twenty days old. He then placed them at his chamber window, that he might be amuſed by their ſportive flutterings; but was ſoon ſurprized to ſee the old ones come and feed their brood regularly every hour in the day. By theſe means they themſelves ſoon grew ſo tame, that they ſeldom quitted the chamber, and at laſt continued to live entirely with their young. All of them frequently perched on their maſter's hand, chirruping as if they had enjoyed perfect liberty. He fed them with a very fine paſte, compoſed of wine, biſcuit, and ſugar; into which they thruſt their tongues till they were ſatisfied, and then fluttered and chirruped about the room. 'I never beheld any thing more agreeable,' ſays Labat, 'than this lovely little family, that had taken poſſeſſion of my companion's chamber, and that flew out and in at their pleaſure, but were ever attentive to the voice of their maſter when he called them. In this manner they lived with him upwards of ſix months; but, at a time when he expected to ſee a new colony formed, he unfortunately forgot to tie up their cage to the cieling at night, in order to preſerve them from the rats; and in the morning he had the mortification to find them all deſtroyed.'

On the continent of America theſe birds continue to flutter all the year round, their food never forſaking them in thoſe genial climates where they abound; but thoſe of the Antilles, when the winter ſeaſon approaches, retire, and, as ſome ſay, continue in a torpid ſtate during it's ſeverity. At Jamaica and Surinam, however, where the flowers retain a perpetual verdure, theſe elegant birds are never known to diſappear.

It is doubtful whether theſe birds have one continued note in ſinging. All travellers agree that, beſides the humming noiſe produced by their wings, they have a low interrupted chirrup; but Labat aſſerts, that they have a moſt pleaſing ſolemn melody in their notes, though weak, and proportioned to the organs which produce it.

The plumage of the Humming-Bird was formerly in high eſtimation among the Indians, as an ornament for their belts and head-dreſſes. Their children take theſe birds in the fields, on rings beſmeared with a viſcuous ſubſtance. They approach the places where the little creatures are flying, and twirling their rings in the air, ſo allure them, either by their colour or ſound, that the ſimple animals perch on them, and are detained. They are then inſtantly killed, gutted, and ſuſpended in chimneys, in order to dry. Thoſe who take the greateſt care of their feathers, dry them in ſtoves, which is generally found a better method of preſerving their beauty. The higheſt ranks of ſavage nobility formerly valued themſelves on the ornaments

ornaments derived from theſe birds; but at preſent they rather catch them for ſale to the Europeans than as decorations for themſelves. Even among the Americans, the taſte for ſuch finery is beginning to grow obſolete; for they now adopt, if not the dreſſes of the Europeans, at leaſt the materials of which they are compoſed.

Humming-Bird, Red, Long-Tailed; the Trochilus Ruber of Linnæus. This is one of the largeſt and moſt beautiful ſpecies of the whole genus. The bill is long, ſlender, incurvated, and black; the head and upper part of the neck are of the ſame colour, but gloſſy; the throat is a moſt ſplendid green, reflecting the colour of gold; and below this there is a black ſemilunár line, parting it from the breaſt, which is roſaceous. The back and covert-feathers of the wings are red, ſomewhat inclining to orange; the quills are of a dull purple colour; the tail contains two long feathers, which are alſo purple; the ſide-feathers of the tail are a reddiſh orange; the lower part of the back, the rump, and the coverts of the tail, are of a fine green hue; and the legs and feet are black.

Humming-Bird, Little Brown; the Trochilus Pella of Linnæus. This ſpecies, which is a native of Surinam, is extremely minute. The bill is long, ſlender, and incurvated; the upper mandible, which is longer than the nether, is of a dark or black colour; and the lower mandible is fleſh-coloured towards the baſe, and black towards the tip. The top of the head is of a dirty brown hue; the throat, the ſides of the head, the neck, the breaſt, and the belly, are of a bright bay or dirty orange-colour; under the eye there is a dark brown or black ſtroke; the back and the upper part of the wings are of a dull brown colour intermixed with a bright yellow; the quill and tail-feathers are a dirty purple; and the legs, feet, and claws, are black.

Humming-Bird, Long-Tailed, Green; the Trochilus Forficalus of Linnæus. This bird is a native of Jamaica. The tail is very long and broad in proportion to the body; the bill is ſlender, ſtraight, long, and blackiſh; the crown of the head is blue; the quills are of a dirty purpliſh colour; the coverts of the wings are green; the lower belly and coverts under the tail are white; the thighs are duſky; the tail-feathers are of the moſt vivid beauty, appearing ſometimes of a ſhining blue colour, at others greeniſh, and ſometimes an aſſemblage of all the moſt beautiful tints imaginable. The entire plumage of the body poſſeſſes ſomething of a ſhining golden luſtre; and the legs, feet, and claws, are black.

Humming-Bird, Long-Tailed Black Cap; the Trochilus Polytmus of Linnæus. The tail of this ſpecies is remarkably long; the two long feathers are of a looſe, ſilky texture, and eaſily ruffled; the bill is thicker at the baſe than moſt of the kind, pretty long, a little incurvated, and of a yellow colour, with a black point; the crown of the head, and the beginning of the neck behind, are black, with a blueiſh gloſs; the throat, breaſt, and belly, are covered with green feathers inclining to blue, and of ſuch a beautiful ſurface, that they reflect the light like burniſhed gold; the plumage on the back is of a yellowiſh green hue, without any remarkable luſtre; the wings are a browniſh purple, in ſome lights exhibiting a blueiſh purple caſt; and the tail is black or duſky, the feathers increaſing in length from the middlemoſt to the moſt extreme but one, which is five times the length of the reſt. This bird, which was imported from Jamaica, was firſt deſcribed by Edwards.

Humming-Bird, White-Bellied; the Trochilus Mellivorus of Linnæus. This ſpecies is a native of Surinam. The bill is pretty long, ſtraight, and ſlender, the points of the upper and lower mandible inclining a little towards each other; the whole head and neck are of a fine blue colour; the back, rump, and leſſer covert-feathers of the wings, are a lively green; at the bottom of the neck behind there is a white mark in the ſhape of a creſcent, the horns pointing upwards; the belly is white; the wings are copper-coloured inclining to purple; the middle feathers of the tail are green; the ſides are white; and the legs and feet are of a blackiſh colour. The colours of this bird, as is common indeed to the genus in general, ſeem intermixed with fine golden threads, which add to it's brilliance when viewed in the ſun-beams.

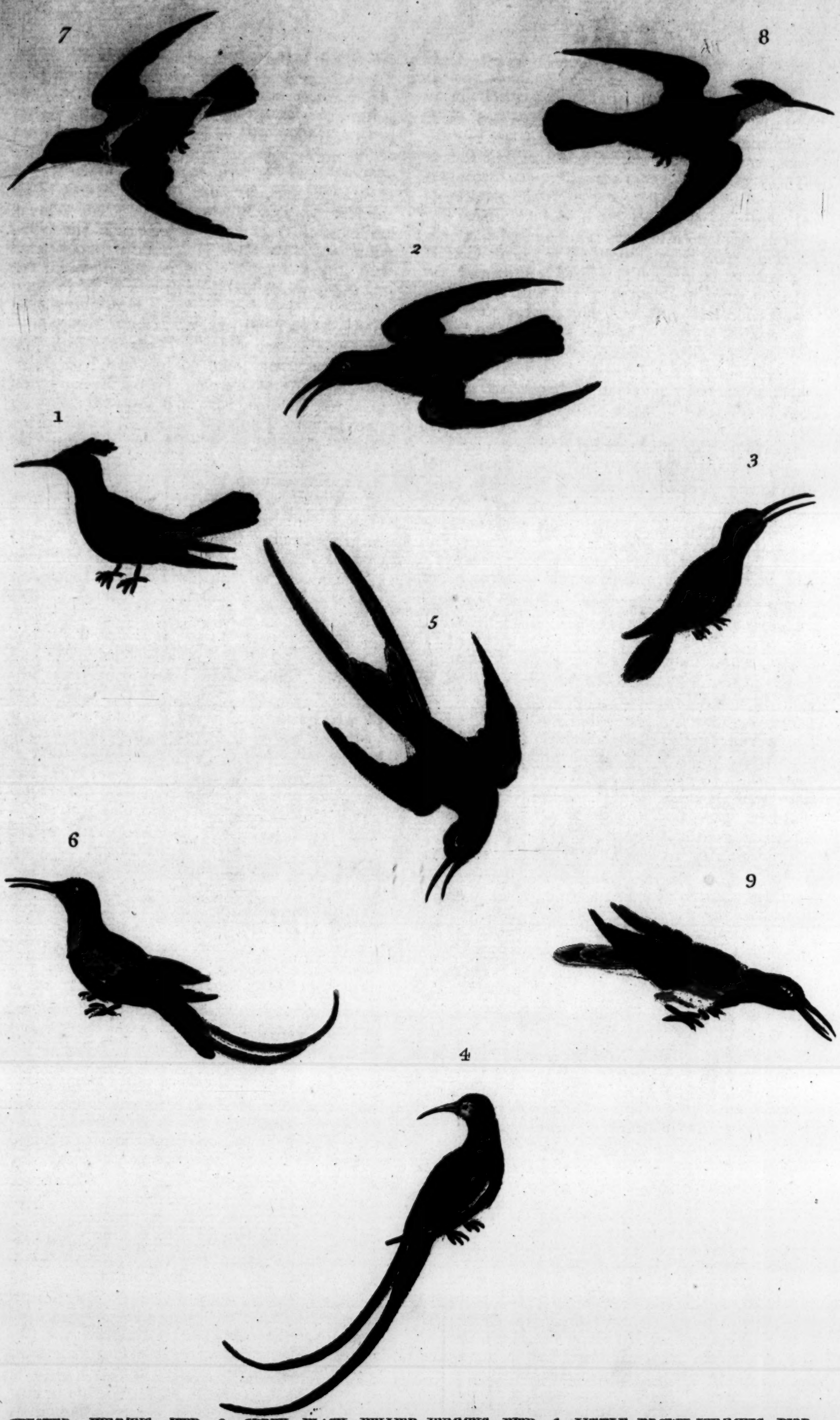
Humming-Bird, Green, Black-Bellied; the Trochilus Holocericeus of Linnæus. This bird is pretty large for it's genus: the bill is long, ſlender, incurvated, and black; the head, neck, back, and leſſer coverts of the wings, are of a blueiſh green colour; the ſcapulars have ſomething of a red intermixed with the green; the breaſt, and the covert-feathers of the tail both above and beneath, are blue; the middle of the belly is black; the quill-feathers are of a dirty purpliſh tinge; the tail is black above and blue beneath; and the legs and feet are black.

Humming-Bird, Crested; the Trochilus Criſtatus of Linnæus. This bird is a native of the Weſt Indies: the bill is ſlender, ſharp-pointed, incurvated, and blackiſh; the top of the head, from the bill to the hinder part, which terminates in a creſt, is partly green and partly blue, both which colours ſhine with a luſtre ſurpaſſing poliſhed metal; the plumage on the upper part of the body and wings is a dark green intermixed with gold-colour; the breaſt and belly are of a dark, dirty, grey colour; the quills are purpliſh; the tail is a blueiſh black, ſomewhat gloſſy on the upper ſide; and the legs and feet, which are very ſmall, are blackiſh.

Humming-Bird, Red-Throated; the Trochilus Colubris of Linnæus. Cateſby, in his Hiſtory of Carolina, firſt figured and deſcribed this ſpecies, which is a native of Carolina, and during the ſummer is found as far north as New England. The bill, with reſpect to ſhape and colour, reſembles the genus in general; the upper part of the head, the neck, back, and leſſer coverts of the wings, are of a fine gloſſy dark green hue, ſeemingly intermixed with threads of gold; the prime-feathers of the wings are a dirty purple; the tail is purple, except the middle feathers, which are green; the middle of the belly, and the covert-feathers under the tail, are white; and the throat is of a beautiful red hue, but varying according to the poſition in which it is viewed.

Humming-Bird, Least; the Trochilus Minimus of Linnæus. This very minute ſpecies weighs only about twenty grains: the bill, and the whole upper ſide of the head, neck, body, wings, and tail, are of a dirty brown hue, but in the ſun exhibit a gloſs of a golden green colour; the underſide of the head, neck, and belly, are a dirty white; and the legs and feet are black. This bird, which is a native of Jamaica, was firſt noticed by Sir Hans Sloane.

Humming-Bird, Ruby-Crested; the Trochilus



1. CRESTED HUMMING BIRD. 2. GREEN BLACK-BELLIED HUMMING BIRD. 3. LITTLE BROWN HUMMING BIRD.
4. LONG-TAILED BLACK CAP HUMMING BIRD. 5. LONG-TAILED GREEN HUMMING BIRD. 6. RED LONG-TAILED HUMMING BIRD
7. RED-THROATED HUMMING BIRD. 8. RUBY-CRESTED HUMMING BIRD. 9. WHITE BELLIED HUMMING BIRD

Plate LIV. Published as the Act directs by Harrison & Co. Oct. 29. 1785.

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chilus Elatus of Linnæus. The bill of this ſpecies is of the common ſtructure and colour; the creſt or crown, which is of a fine red or flame-colour, poſſeſſes the luſtre of the ruby; the throat reſembles burniſhed gold, changing in ſome poſitions to an emerald green; the body, and the coverts of the wings, are of an obſcure browniſh olive hue, the quills inclining a little to purple; the tail-feathers are of a cinnamon tinge, with black tips; the lower belly, and the coverts beneath the tail, are of the ſame colour with the tail; and a white line croſſes the middle of the belly. This beautiful little bird, which is a native of Guiana, was firſt deſcribed by Edwards.

Humming-Bird, Green; the Trochilus Mellifugus of Linnæus. The bill of this bird is long, black, and ſlender; the head, neck, and whole body, are of a lively green colour, blueiſh and gloſſy on the upper ſide; the coverts of the wings are ſomewhat yellowiſh; the quills are of a brownish purple hue; the tail is a dark blue; and the legs and feet are black.

HUSO. A large fiſh of the ſturgeon or accipenſer kind, without tubercles, caught in the Danube, Boriſthenes, and other large rivers. It is furniſhed with a very long ſnout, under which there are either four or eight beards; and it has one dorſal fin placed near the tail, and two pair under the belly. In it's general ſhape, it bears a pretty ſtrong reſemblance to the pike; it's back is black, and it's belly yellow; it has thirteen dorſal and forty-three caudal ſcales; and is ſupplied with cartilages inſtead of bones. This fiſh ſometimes grows to the length of twenty-four feet, and frequently weighs four hundred pounds. It is a gregarious animal, ſwimming always in ſhoals; and is caught in great abundance about the months of October and November. It's fleſh is not much eſteemed; but the fiſh itſelf is extremely valuable on account of the drug called iſinglaſs, and that luxury known by the name of caviar; which are both prepared from it. See Isinglass Fish.

HYÆNA; the Canis Hyæna of Linnæus. This animal, which belongs to the dog kind, is about the ſize of the wolf, and reſembles that creature in the ſhape of it's head and body: however, the head is ſomewhat broader, and leſs pointed; and the ears are longer. The hair on the body is long, coarſe, rough, of an aſh-colour, and marked with long black ſtripes from the back downwards; and the neck is furniſhed with an upright mane. The tail is very thick of hair, ſometimes plain, and at others barred with black; and immediately under it, above the anus, there is an opening into a kind of glandular porch, which ſeparates a ſubſtance of the conſiſtence, though not of the odour, of civet: and this aperture probably gave riſe to the erroneous opinion of the ancients, who aſſerted, that the Hyæna was every year alternately male and female.

This creature, which is more ſavage and untractable than any other quadruped, is continually in a ſtate of rage or rapacity; ever growling, except when receiving it's food: it's eyes then gliſten, the briſtles of it's back are erected, and it's teeth appear; all giving it a moſt frightful aſpect, which is ſtill farther heightened by it's dreadful howling, that ſometimes reſembles the voice of a human creature in diſtreſs; and hence the ancients have amuſed us with fabulous accounts of it's counterfeiting thoſe accents purpoſely to attract the notice of unwary travellers, and then to deſtroy them.

The Hyæna, indeed, in proportion to it's ſize, is the moſt terrible of all quadrupeds: nor does it's courage fall ſhort of it's ferocity; it defends itſelf againſt the lion, is a match for the panther, and frequently vanquiſhes the ounce. However, it is an obſcure and ſolitary animal; and chiefly inhabits Aſiatic Turkey, Syria, Perſia, and Barbary. It reſides either in the caverns of mountains, in the clifts of rocks, or in ſubterraneous dens which it has formed for itſelf. Though taken ever ſo young, it ſeems utterly incapable of being tamed; it is ferocious without generoſity, and cruel from innate principle. Like the jackall, it violates the repoſitories of the dead, and greedily feaſts on the putrid contents of the grave. Like it, too, it preys on the flocks and herds; and, when deſtitute of other food, will eat the roots of plants, and the tender ſhoots of palm-trees.

When the ſuperſtitious Arabs kill a Hyæna, they carefully bury the head, leſt it ſhould be applied to magical purpoſes, as the neck was of old by the Theſſalian enchantreſs. Nor is it at all wonderful that an ignorant Arab ſhould attribute to the remains of this animal a ſupernatural power, when even the moſt enlightened among the ancients believed that it changed it's ſex; and that it had a power of charming the ſhepherds, and, as it were, of rivetting them to the very ſpots where they ſtood. Some likewiſe have reported, that this creature changed the colour of it's hair at will; others, that a ſtone was found in one of it's eyes, which, when put under a man's tongue, endued him with the gift of prophecy; ſome, that it's neck was deſtitute of joints; and others, that it's very ſhadow reſtrained dogs from barking. Such are the abſurdities which have been propagated concerning this formidable animal; and ſuch probably have originated from the ferocity of it's nature, and the principle of fear in the human breaſt, which always conjures up imaginary terrors, and adds horror to what is only dreadful.

Hyæna, Spotted. This ſpecies, which inhabits Guinea, Ethiopia, and the Cape of Good Hope, poſſeſſes the nature and qualities of the common Hyæna, but is conſiderably larger and ſtronger. The head is large and flat; the whiſkers are extremely long; the mane is ſhort and black; the hair on the body is ſhort and ſmooth; and the ears, which are ſhort and pointed, are internally cinereous, and externally black. The face is black; the body and limbs are of a reddiſh brown hue, and marked with diſtinct round black ſpots; the hind-legs are barred tranſverſely with black; and the tail is ſhort, black, and hairy.

HYDRA. See Natrix.

HYDROCHÆRIS. The Linnæan term for a ſpecies of the hog genus found in Surinam. See Capybara.

HYDROCORAX. A name given by ſome authors to the Corvus Indicus.

HYMENOPTERA. In the Linnæan ſyſtem, an order of inſects having four membranaceous wings; and the tails of the females being furniſhed with ſtings, which in ſome are uſed for inſtilling poiſon, and in others merely for piercing the bark and leaves of trees, in order to depoſit their eggs. To this claſs belong ten genera, the cynips, lenthredo, ſirex, ichneumon, ſphex, chryſis, veſpa, apis, formica, and mutilla, comprehending a conſiderable

ſiderable number of ſubordinate ſpecies. This term is derived from Ymen, a Membrane; and Pteron, a Wing.

HYPNOTICUS SERPENS, the Sleep Snake. An Eaſt Indian ſpecies of ſerpent, called by the Ceyloneſe Nintipolong, a word importing the ſame meaning. It is of a deep blackiſh brown colour, variegated with white ſpots; and it's poiſon, which is extremely ſubtle, always brings on a ſleep that terminates in death.

I.

JABIRU. A large aquatic bird of the crane kind, by ſome called the Negro. It is a native of Brazil, and was firſt deſcribed by Marcgrave. It is ſomewhat larger than the ſwan; the head is large; the neck is thick; the beak is long and ſtraight; and the legs, which are two feet long, are thick and ſcaly. The body is entirely white; the neck and head are naked, and covered with a thick black ſkin inſtead of feathers; and the tail is broad and ſhort.

JABIRUGUACU. A Brazilian bird, called alſo Nanduapoa; and by the Dutch, Scurvogel.

JABOTI. An American ſpecies of tortoiſe; the ſhell of which is black, marked with numerous hexangular ſpots; and the head and legs are brown, variegated with ſpots of a duſky greeniſh hue.

JACAMACIRI. A Brazilian bird about the ſize of the lark, with a ſtraight, ſharp-pointed, black bill, near two inches long. It approaches to the nature of the woodpecker tribe, having feet of a ſimilar ſhape with thoſe of that genus; but it's tongue is ſhort, in which particular it differs from all other woodpeckers. It's whole head, neck, wings, back, and tail, are green, variegated with yellow and red; it's breaſt and belly are of a duſky yellow hue; and there is a white ſpace under it's bill.

JACANU. A Brazilian bird of the moor-hen genus: it is about the ſize of the pigeon, but it's legs are conſiderably longer, and of a greeniſh colour; and all it's toes, particularly the hinder one, are remarkably long. The back, belly, and wings, are an admixture of green and black; the neck and breaſt are of the moſt beautiful pavonaceous colours; the head is ſmall, and covered with a torquoiſe-coloured membrane; the beak is ſhaped like that of the gallinaceous kind, partly greeniſh and partly red; and the tail is extremely ſhort. This bird frequents marſhy places; and it's fleſh is eſteemed by the Brazilians.

JACAPU. A bird of the merula kind, about the ſize of the common blackbird. The whole upper part is of a deep black colour, except that the tips of the feathers which cover the rump are greyiſh; the breaſt is of a very fine red hue; and the tail is long and black.

JACARE. A Brazilian animal of the crocodile or alligator kind, not ſpecifically differing from that formidable tribe. It has no tongue; the eyes are large, round, and very bright; the irides are blue; and the pupils are a fine black. The fore-legs are ſhort and ſlender, the hind ones being longer and more robuſt; the fore-feet have each five toes, the hinder only four; and the farther half of the tail is furniſhed with a ſtrong erect fin, which eſſentially aſſiſts the creature in ſwimming.

JACARINI. A Brazilian bird of the fringella kind, nearly about the ſize of the common gold-finch. The bill, which is pretty thick, is greyiſh, of which colour alſo are the legs and feet; the body is wholly of a fine ſhining black hue like poliſhed metal, reflecting green and blue; and the under-ſides of the wings are white.

JACK. A provincial appellation for the pike. See PIKE.

JACK-DAW; the Corvus Monedula of Linnæus. This very common bird has a large head in proportion to it's body; the hind-part of the head is of a fine light grey colour; the breaſt and belly are duſky inclining to cinereous; the body is black, ſlightly gloſſed with blue; the feet and bill are black; and the claws are very ſtrong and hooked.

The Jack-Daw, which is docile and loquacious, breeds in ſteeples, old caſtles, and high cliffs; lays five or ſix eggs; and feeds on inſects, ſeeds, and grain. Indeed, ſo very voracious is this bird, and ſo thieviſh in it's diſpoſition, that it generally carries off much more than it can devour. It is extremely injurious to farmers and gardeners, and therefore conſtantly proſcribed. In ſome parts of England it is caught by the following device: A ſtake, about five or ſix feet in length, is firmly driven into the ground, and the point rendered ſo ſharp, that the Jack-Daw cannot reſt on it. A hole, about three-quarters of an inch in diameter, is made in the ſtake, within a foot of the top; through which a ſtick, about eight inches long, is put: then a horſe-hair ſpringe or nooſe is faſtened to a thin hazel wand; and this is brought up to the place where the ſhort ſtick is ſituated, and carried through the hole along with it, the remainder being left open under that ſtick. The other end of the hazel rod is put through a hole in the ſtake near the ground, and faſtened there. This being done, the ſtake is planted among ſuch food as Jack-Daws are generally fond of: the bird naturally endeavours to reſt on it; but finding the point too ſharp, he deſcends to the little croſs ſtick, which ſinking with the weight, the ſpringe receives his leg, and holds him faſt.

JACK-SNIPE; the Scolopax Gallinula of Linnæus. This bird is about half the ſize of the common ſnipe, and on that account has ſometimes received the name of the Half-ſnipe. The crown of the head is black, tinged with ferruginous; there is a yellow line over each eye; the neck is variegated with white, brown, and pale red; the ſcapulars are long, narrow, and brown, bordered with yellow; the rump is of a gloſſy blueiſh purple hue; the belly and vent are white; the tail, which is brown edged with tawny, conſiſts of twelve pointed feathers;

feathers; and the legs are of a cinereous green colour.

This bird frequents the ſame places, and delights in the ſame ſort of food, as the common Snipe; but it is more ſluggiſh in it's motions, and ſeldom attempts a diſtant flight: it will ſuffer a perſon to come almoſt cloſe up to it before it will riſe; and therefore affords excellent diverſion to the fowler.

JACKALL; the Canis Aureus of Linnæus. This animal is vulgarly termed the lion's provider, from an opinion that it rouſes that animal's prey. However, the truth is, that every creature in the foreſt is ſet in motion by the cries of the Jackall: the lion, and other beaſts of rapine, attend the chace by a kind of inſtinct, and ſeize thoſe timid animals that betake themſelves to flight at the noiſe of this nocturnal pack.

Though the Jackall is one of the moſt common wild beaſts of the Eaſt, there is ſcarcely any quadruped leſs known in Europe, or more imperfectly deſcribed by naturaliſts. It is ſaid to be of the ſize of the common fox, and to reſemble that animal in it's hinder parts, particularly the tail; and the wolf in it's fore-parts, eſpecially the noſe. It's legs are ſhorter than thoſe of the fox; and it's colour is a bright yellow.

Theſe animals are natives of all the hot and temperate parts of Aſia; and are found in Barbary, and other countries of Africa, as low as the Cape of Good Hope. There ſeems to be ſeveral varieties among them: thoſe of the warmer climates appear to be the largeſt; and their colour partakes more of a reddiſh brown than of that beautiful yellow by which the ſmaller Jackalls are diſtinguiſhed.

The Jackall ſeems to be placed between the wolf and the dog; and to poſſeſs the ferocity of the former, and the familiarity of the latter. It's voice is a howl mixed with barking, and a lamentation reſembling that of human diſtreſs; and, in it's purſuits, it is more noiſy than the dog, and more voracious than the wolf. Jackalls always hunt in packs of forty or fifty together; and unite regularly every day, in order to form a combination againſt the other inhabitants of the foreſt. Nothing can eſcape them; they ſatisfy their appetites with the ſmalleſt animals; and yet, when thus united, have ſufficient courage to face the largeſt. They ſeem to be under little apprehenſion from mankind; but purſue their game to the very dwellings of the natives, without teſtifying either attachment or ſuſpicion. They boldly enter ſheep-folds, yards, and ſtables; and, when they can find nothing better, devour leather harneſſing, boots, and ſhoes; and frequently carry off what they have not time to conſume. They not only attack the living, but alſo the dead: they ſcratch up new-made graves with their feet, and devour the moſt putrid corpſes; and, in thoſe countries where they abound, it is abſolutely neceſſary to beat the earth over the graves, and to mix it with thorns, in order to prevent the Jackalls from ſcraping it away.

Theſe creatures always aſſiſt each other, as well in the employment of exhumation, as in that of the chace. While engaged in this dreary work, they encourage each other by a doleful cry, reſembling that of children under caſtigation; and, when the body is dug up, they ſhare it amicably among themſelves. Like all other ſavage animals, when once imbued with human blood, they never can refrain from purſuing mankind afterwards: they watch the dormitories of the dead, mark the progreſs of armies, and cloſe the rear of caravans. In ſhort, they may be conſidered as the vultures of the quadruped kinds; every thing that once poſſeſſed animal life ſeems equally grateful to them; the moſt putrid ſubſtances are eagerly devoured; and the moſt inſipid morſels are added to compleat the repaſt.

The Jackall hides itſelf by day in ſome hole, ſeldom venturing abroad before the night commences. When it has fallen on the ſcent of any larger animal, it gives notice to it's aſſociates by a kind of howl, which it repeats as it runs; while all the Jackalls within hearing pack to it's aſſiſtance. The chace is ſometimes long and warm; the creature purſued frequently takes ſhelter near the abodes of men; and thus the Jackalls are often diſappointed when they expect an immediate booty. But man is not the only enemy that oppoſes the Jackall's induſtry and ſucceſs: the lion, the tiger, and the panther, whoſe appetites are ſuperior to their ſwiftneſs, attend to it's call, and follow in ſilent expectation at a ſmall diſtance behind. After the Jackall has perhaps tired down it's prey, and is juſt about to participate of the fruits of it's labour, the lion, or the leopard, comes in, ſatiates himſelf on the ſpoil, and leaves only the ſcanty remains to the famiſhed hunter: hence it is not ſtrange that the Jackall is extremely voracious, ſince it ſeldom has a ſufficiency; nor that it preys on putrid ſubſtances, ſince it is not permitted to feaſt on what is recently killed.

Beſides theſe enemies, this creature has ſtill another to contend with; namely, the dog, between whom and the Jackall there exiſts ſuch an irreconcileable antipathy, that they never meet without an engagement. The Indian peaſants often chace Jackalls in the ſame manner as the Europeans purſue foxes; and have learned by experience to diſtinguiſh when they have got a lion or a tiger in their rear: on ſuch occaſions they keep their dogs cloſe, and endeavour to put theſe furious animals to flight by their cries. When the lion is diſmiſſed, the Jackalls are more eaſily vanquiſhed; the dogs overtake them in their career; and, by the aſſiſtance of their maſters, generally deſtroy ſome of them.

Wild as the Jackall naturally is, Dallon informs us, that it is capable of being tamed, and is ſometimes kept among domeſtic animals.

Linnæus mentions an animal of this kind, about the ſize of a large cat, which inhabits Surinam. The tongue is fringed on the ſides; and on the cheeks, above the eyes, and under the throat, there are numbers of warts. The upper part of the body is of a greyiſh colour, and the lower white; and there are five toes before, and four behind.

JACOBINE; the Columba Cypria Cucullata of Moore. This ſpecies of pigeon, when of the genuine breed, is the ſmalleſt of any. It has a range of feathers, inverted quite over the hinder part of the head, and reaching down on each ſide of the neck to the ſhoulders of the wings, which forms a kind of hood, and gives the bird it's claſſical name. The colours of the plumage are various, being a mixture of red, yellow, blue, black, and mottled; but whatever is the general colour, the head, tail, and flight, are always white. Some varieties are feathered down to the toes, and the legs of others are bare.

JACULATOR; the Chætodon Roſtratus of Linnæus. This fiſh has an entire tail, nine ſpines in the dorſal fin, a brown circular ſpot reſembling

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an eye, and a cylindric ſnout. It is a native of India, and derives it's name from the manner in which it collects it's food: for this purpoſe it frequents the ſhores and ſides of the ſea and rivers; and when it ſpies a fly on any of thoſe plants which grow in ſhallow water, it ſwims on to the diſtance of a few feet, and then, with ſurprizing dexterity, ejects out of it's tubular mouth a ſingle drop of water, which never fails to precipitate the inſect into the ſea or river, where it becomes an eaſy prey.

JACULUM. An appellation given to the ſerpent more frequently called the acontias, found in the iſland of Rhodes, and ſome other places. See ACONTIAS.

JACUPEMA. A Brazilian bird of the pheaſant kind, about the ſize of the common European hen. It receives it's name from it's note, which is a repetition of the word Jacu. It's fleſh is reckoned extremely delicate; and it is eaſily domeſticated.

JAGUACATI-GUACU. A Brazilian bird of the halcyon kind, called by the Portugueſe Papa Peéxe. It is about the ſize of the thruſh; and it's colours have a ſtrong reſemblance to thoſe of the common king-fiſher.

JAGUAR. An animal of the feline kind, of a bright tawny colour. The top of the back is marked with long black ſtripes; and the ſides are impreſſed with irregular oblong ſpots, open in the middle, which is the ground colour of the hair. The thighs and legs are marked with full black ſpots; the belly and breaſt are whitiſh; and the tail is ſhorter than the body.

The Jaguar reſembles the ounce in ſize, in the figure of it's ſpots, and even in it's diſpoſition. It is the moſt formidable, as well as the moſt cruel animal, and in a word the tiger of the New World, where nature ſeems to have contracted every kind of quadruped. Like the tiger, the Jaguar lives ſolely on prey: but any kind of light is ſufficient to intimidate it; and when it's ſtomach is full, it ſo entirely loſes all it's courage and vivacity, as to fly before a ſingle dog. It is neither nimble nor active, except when preſſed with hunger: nevertheleſs, the ſavages, who are naturally timid, are afraid to encounter it; alledging, that it prefers them to the Europeans, whom it never attacks.

Almoſt all authors who have penned the hiſtory of the New World, mention this animal; ſome under the name of the tiger or leopard; others under it's Brazilian appellation; and ſome have called it the Jaguara, or Janouara, one of it's Brazilian titles. It is found in Brazil, Paraguay, Guiana, Mexico, the country of the Amazons, and all South America. It begins, however, to become more rare in Brazil, it's native climate, than formerly: a price has been ſet on it's head; in conſequence of which numbers have been deſtroyed; and the reſt have retired from the coaſts to the more deſart and interior parts of the country.

JAGUARETTE. This animal inhabits the ſame countries, and poſſeſſes the identical diſpoſitions, of the jaguar; ſo that naturaliſts have been at a loſs to determine whether they were two diſtinct ſpecies of the ſame genus, or only varieties of the ſame ſpecies. Piſo and Marcgrave, the only two authors who ſeem to have had an opportunity of giving original deſcriptions of the Jaguarette, ſay that it is diſtinguiſhed from the jaguar by having ſhorter, more bright, and differently coloured hair, which is black, and variegated with ſpots of a ſtill deeper black. In every other particular it reſembles the jaguar: and may therefore be ſafely fixed as a variety only of the ſame ſpecies; eſpecially as Piſo informs us, that in the jaguar the ground-colour of the hair, and that of the ſpots, vary in different individuals of the ſame ſpecies.

The Jaguarette is much leſs common than the jaguar, at leaſt near the abodes of men. It keeps cloſe to thoſe ſolitudes where it can range without interruption; and prefers liberty and ſecurity to plenty accompanied with danger.

JAMACAII. A Brazilian bird, about the ſize of the lark: it's head is ſmall and black; it's beak is a little incurvated; it's throat is of the ſame colour with it's head; the upper part of it's neck is yellow; and it's back, breaſt, and belly, are alſo yellow. It's wings are black, except a white ſpot on each; it's tail is wholly black; and it's legs and feet are brown. This bird makes a very elegant appearance; and, from the extreme length of it's tail, it ſeems to be of the motacilla kind.

JAMBON. An appellation given by ſome naturaliſts to a kind of marine ſhell ſomewhat reſembling a ham of bacon; a ſpecies of the pinna marina.

JAMBU. A ſort of Brazilian partridge, of which there are two ſpecies. They are both of a duſky yellow colour; and their fleſh is much eſteemed for it's delicacy and flavour.

JAPACINI. A ſmall Brazilian bird, having a long, black, pointed beak, a little bent downwards; the head is black; the back, neck, and wings, are of a greeniſh brown colour mixed with black; the upper part of the tail is black, the under being ſpotted with white; the breaſt, belly, and thighs, are variegated with white and yellow; and the latter are likewiſe marked with tranſverſe black ſtreaks.

JAPU. A Brazilian bird of the woodpecker kind, called alſo Jupajuba. See JUPUJUBA.

JARARA-COAYPITINGA. A ſpecies of American ſerpent, which bears a ſtriking reſemblance to the common viper, and is equally venomous. The tail is ſomewhat paler than the reſt of the body; and thence it receives it's name, which, in the language of the natives, expreſſes this quality.

JARARA-EPEBA. An American ſerpent of a brown colour, variegated with a beautiful undulated red line running along the back like a chain.

JARARACA. A ſerpent very common in America, of which De Laet enumerates four ſpecies. It ſeldom exceeds one foot and a half in length; the head is marked with ſome prominent veins; and the body is of a duſky brown colour, variegated with red and black ſpots. This reptile is accounted very poiſonous; but the natives are provided with an antidote againſt it's effects in the root of a plant by them called caatia; and, by the Portugueſe, herba de cobros.

JARARACUCU. An American ſerpent of the viviparous kind; and extremely prolific, thirteen young having been found in the belly of a female of this ſpecies. It grows to the length of thirty inches; and, like other poiſonous reptiles, has very large and long teeth hid in the gums, containing a yellow infectious fluid: theſe it only exerts in the act of biting; and ſo deleterious is it's poiſon, that it generally carries off the perſon infected in the ſpace of twenty-four hours.

JAUNDICE-BIRD. An appellation given by ſome authors to the galbula, a bird of the turdus kind,

kind, having black wings, and the body being beautifully ſtained with a golden tinge.

JAY; the Corvus Glandarius of Linnæus. The Jay is one of the moſt beautiful of the feathered tribes that is properly a native of Britain. The bill is ſtrong, thick, black, and about a quarter of an inch long; and the tongue is black, thin, and cloven at the point. The forehead is white, ſtreaked with black; the head is covered with very long feathers, which the bird can erect at pleaſure; the neck, breaſt, back, and belly, are of a faint purple colour, daſhed with grey; the covert-feathers of the wings are of the ſame colour; the greater coverts of the wings are moſt elegantly barred with a lively blue, black, and white; the tail is compoſed of twelve feathers; and the feet are of a pale brown colour.

The Jay lays five or ſix eggs of a dull white colour mottled with a pale brown. Like the magpie, it feeds on fruits; and in ſummer is very injurious to gardens, being a great devourer of peaſe and cherries. In autumn and winter it lives on acorns; and, according to Dr. Kramer, will ſometimes kill ſmall birds. It's native note is very diſagreeable; but being naturally extremely docile, it is eaſily taught to imitate the human voice. It's length is about thirteen inches; the expanſion of it's wings is twenty-ſix; and it's weight is between ſix and ſeven ounces.

JAY, BLUE; the Corvus Criſtatus of Linnæus. The ſhape of this bird is not unlike that of the common European Jay, except that the tail is longer, and the feathers are of unequal lengths, thoſe in the centre being the longeſt. The bill is black; and the noſtrils are covered with ſmall white hairs, reflected forwards. The top of the head is adorned with long blue plumes, which the bird can either erect or depreſs; the ſides of the head, and part of the throat, are white, ſurrounded with a black line; and above each eye there is a white ſpot. The lower part of the neck behind, and the back, are of a blueiſh purple colour; the upper ſides of the wings and tail are a very fine blue; and the lower part of the back and rump are of the ſame colour. The tail-feathers, except the two centre ones, are tipped with white, and barred with three black lines; the reſt of the quills next the back, and the firſt row of the feathers above them, are tipped with white, and elegantly barred with black. The breaſt is of a browniſh red colour, inclining to roſeaceous, which gradually becomes white towards the belly; and the legs, feet, and thighs, are a duſky brown, and of the common form.

This bird, which inhabits Carolina, has a more harmonious note than the European Jays; and the colours of the female are nearly the ſame with thoſe of the male, except that they are ſomewhat duller.

JAY, BLUE, EAST INDIAN; the Coracius Indica of Linnæus. This bird is conſiderably larger than the common Jay: the bill is black or duſky; the crown of the head is of a fine blueiſh green colour; the fore-part and ſides of the head, beneath the eyes, the throat, breaſt, upper ſide of the neck, and back, are of a reddiſh brown hue, ſomewhat lighter on the throat and breaſt than behind; the rump and covert-feathers above the tail are of a fine blue colour; the middle feathers of the tail are green; and the outſides are a beautiful blue at their bottoms and tips, and green in the middle. The leſſer coverts of the wings are of an ultramarine blue colour; the firſt row of coverts above the quills is ſea-green; the quills are ſea-green at their baſes, ultramarine in the middle, and ſea-green again towards their ends; but their extreme points are a fine dark blue. The belly, thighs, and coverts beneath the tail, are a blueiſh ſea-green; and the legs and feet are of a yellowiſh fleſh-colour.

JAY, BUFF, OF MADRASS. This ſpecies is about the ſize of the common magpie. The upper part of the tail is black, except the extreme points, which are yellow; a black oblique ſtripe ſurrounds the eyes; the wings are black, with yellow points; and the other parts of the body are browniſh, intermixed with duſky reddiſh lines.

JAY, YELLOW, EAST INDIAN. This bird is nearly of the ſame ſize and colours with the Buff Jay of Madraſs, except that the yellow is more faint. The breaſt, as low as the vent, is marked with oblique winding lines; the back and throat are yellow; and the wings, with the ſpace ſurrounding the eyes, are black.

JAY, GREEN, EAST INDIAN. This beautiful bird is chiefly green, and of a very deep tinge on the back and tail. The tail is remarkable for having three points, blackiſh at their tips, and the middleмoſt the longeſt.

IBEX. An animal of the goat kind, inhabiting the higheſt Alps, the mountainous parts of Germany, and the Iſle of Crete. It is extremely ſwift; and it's chace is attended with the greateſt danger. The horns, which are large, knotted, and reclining backwards, are ſometimes four cubits long; the head is ſmall; and the legs are very ſlender: ſo that this creature, though properly belonging to the goat kind, would bear a ſtrong reſemblance to the ſtag, were not the male furniſhed with a very long black beard. The tame ſpecies of goat is ſuppoſed to have ſprung from this ſtock.

IBIBIBOCA. An American ſerpent, called by the Portugueſe Cobra de Coral. It is about two feet long, and two inches thick, but terminates towards the tail in a ſharp point. The belly is white, bright, and gloſſy; the head is covered with white ſcales of a cubic figure; and the body is variegated with black, white, and red. This reptile is very ſlow in it's motions, but of the moſt poiſonous nature.

IBIJARA. An American ſerpent of the amphiſbœna kind, or thoſe which are erroneouſly ſuppoſed to have two heads. The head and tail are of the ſame ſhape, and of an equal thickneſs; and it is ſaid that the creature can ſtrike equally with either, and that both contain a poiſonous fluid. The body is about a foot long, and as thick as a man's finger: it is white, ſhining, gloſſy, and elegantly marked with rings and ſtreaks of a brown or copper colour; and the eyes are ſo very ſmall, as to be ſcarcely viſible. This reptile lives under ground, and feeds on ants and other ſmall inſects: it is often thrown up in digging; and, if we may credit the Portugueſe, it's poiſon is virulent beyond the reach of every human remedy.

IBIJAU. A very beautiful Brazilian bird, of the caprimulgus or goatſucker kind, and about the ſize of the ſwallow. The head is large, broad, and flat; the eyes are black and lively; the beak is ſmall; the mouth is enormouſly large; the legs are very ſhort; the tail is broad; and the colour is blackiſh, ſpotted and variegated with white and yellow.

IBIRACOA. A Weſt Indian ſerpent, of a variegated colour mottled with black, white, and

red; whoſe bite is highly venomous, and always attended with the moſt alarming effects.

IBIS. An Egyptian bird of the ſtork kind; to which divine honours were formerly paid by the ſuperſtitious natives, becauſe inſtrumental in deſtroying the ſerpents, locuſts, and other noxious inſects, with which that country is over-run. Some have confounded this bird with the hæmatopus, or red-legged heron; and others have candidly owned their ignorance of what the ancients intended by the Ibis. However, according to the beſt-informed naturaliſts, it is wholly black; the beak is long, hooked, and red; the legs are of the ſame colour; and the neck is as long as that of the heron. It ſeems to be peculiar to Egypt; and though it generally frequents the vicinity of the Nile, it never truſts itſelf in the water, nor indeed is it adapted for ſwimming. It generally builds it's neſt in palm-trees, in order to avoid the cats. Aldrovandus relates, that the fleſh of the Ibis is red, like that of the ſalmon; that it is ſweet to the taſte; and that the ſkin is extremely hard and tough.

IBITIN. A ſerpent of an uncommon ſize, and of the moſt dangerous nature, found in the Philippine Iſles. It twiſts it's tail round the trunk of a tree, and ſtrikes either man or beaſt that happens to come in it's way with unerring and fatal aim; after which it devours them, and ſqueezes itſelf againſt ſome tree, purpoſely to digeſt what it has eaten.

ICHNEUMON; the Viverra Ichneumon of Linnæus. This animal, which ſome authors have injudiciouſly denominated the Cat of Pharaoh, is one of the boldeſt as well as moſt beneficial animals of the weaſel kind. In Egypt, where it is chiefly bred, it anſwers all the purpoſes of the European cat, and is even more ſerviceable in deſtroying vermin. It is uſually of the ſize of the martin; and greatly reſembles it, except that it's hair, which is generally of a griſtly black hue, is rougher and leſs downy; the tail is alſo leſs buſhy at the extremity; and every ſingle hair poſſeſſes three or four different colours, which are ſeen in different diſpoſitions of it's body. Under the longer hairs there is a ſofter fur of a browniſh colour, the rough hair being about two inches long; but the legs, paws, and ſnout, are covered with only one ſort of ſhort ſmooth hair. To all the ſtrength of the cat, the Ichneumon unites a ſuperior ſhare of inſtinct and agility, a more univerſal appetite for carnage, and a greater variety of powers for it's acquiſition. Rats, mice, ſerpents, lizards, and inſects, are all equally the objects of it's purſuit: it attacks every living creature which it is able to overcome, and indiſcriminately preys on fleſh of all kinds. It's courage can only be equalled by the vehemence of it's appetite: it neither ſtands in awe of the power of the dog, the inſidious malice of the cat, the claws of the vulture, nor the fangs of the viper. It wages war with all kinds of ſerpents, however venomous; and, whenever it begins to perceive the effects of their rage, we are informed that it has recourſe to a certain root which the Indians call by it's name, returns to the attack, and ſeldom fails of victory.

Nor does the Ichneumon uſurp dominion over the ſmaller tribes of animals only: it kills the young alligators before they are able to reach the water; and, as fable generally magnifies acknowledged abilities, it is ſaid to enter the mouth of the crocodile when ſleeping on the ſhore, to devour it's entrails, and eat it's way out again. However this may be, it certainly is highly beneficial to the natives in deſtroying the eggs of that creature, which it digs out of the ſand: and for this reaſon it was worſhipped by the ancient Egyptians, who conſidered every thing that was ſerviceable as an emanation of the Deity; and paid homage to ſuch, as the beſt repreſentatives of God below. Indeed, when we conſider the number of eggs which the crocodile lays at one time, we have reaſon to admire the utility of this little animal, as well as it's induſtry, in deſtroying them; ſince otherwiſe the vaſt multitudes of alligators produced would be ſufficient to over-run almoſt the whole earth.

The Ichneumon, in a ſtate of nature, generally reſides along the banks of rivers; but, during inundations, makes to the higher grounds, and often approaches human habitations in queſt of prey. It advances cautiouſly and ſilently, changing it's manner of moving according to it's neceſſities: ſometimes it carries it's head high, ſhortens it's body, and raiſes itſelf on it's legs; at others, it lengthens itſelf, and creeps along the ground; and it is often obſerved to ſit on it's hind-legs like a dog, and frequently to dart with amazing velocity on it's prey. It's eyes are ſprightly, and full of fire; it's phyſiognomy is ſenſible, it's body nimble, it's tail long, and it's hair rough and various. It's noſe is ſo ſharp, and it's mouth ſo ſmall, that it cannot eaſily ſeize on large animals: however, it compenſates by it's courage and activity the defects of nature; it eaſily ſtrangles a cat, though ſtronger and larger than itſelf; and often contends with dogs, which ſoon learn to dread it as a formidable enemy. Like all it's kind, it is furniſhed with glands in it's poſteriors, which exſude an odorous ſubſtance. It takes the water like the otter; and, according to ſome, can live under it for a conſiderable time without reſpiration.

As theſe animals ſoon arrive at maturity, their lives are conſequently but ſhort. They abound in all the ſouthern parts of Aſia, from Egypt to Java; and are alſo found in Africa, particularly at the Cape of Good Hope. In Egypt, they have been long domeſticated; but, in the colder European climates, it is difficult to breed or ſupport them: nevertheleſs, directed by inſtinct, they uſe every precaution for their preſervation; they wrap themſelves up into balls, hiding their heads between their legs; and in this manner they continue to ſleep the greateſt part of their time. Seba informs us, that one of theſe creatures was ſent to him from the Iſle of Ceylon, which he permitted to run for ſome months about the houſe. It proved heavy and ſlothful by day, and often could not be awaked even by a blow; but it made amends for this inactivity by it's nocturnal diligence, ſmelling then about, without either being wholly tame or wholly miſchievous. It climbed walls and trees with great facility; and appeared extremely fond of ſpiders and worms, which, from their reſemblance to ſerpents, it probably preferred to it's natural food. It was alſo particularly fond of ſcratching up holes in the ground; and this circumſtance, added to it's wildneſs and uncleanlineſs, induced our naturaliſt to ſmother it, in order to preſerve it in ſpirits for his muſeum.

ICHNEUMON, INDIAN. The Indian Ichneumon is about the ſize of the ferret, being about twenty-ſeven inches long. The noſe, which is pretty ſharp, is covered with ſhort hairs of a reddiſh brown

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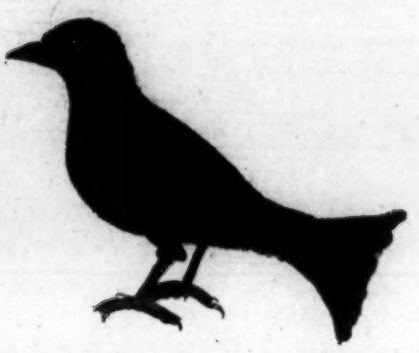

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1. INDIAN ICHNEUMON. 2. BLACK-HEADED ICTERUS. 3. ISATIS. 4. JACARINI. 5. JACAMACIRI. 6. BLUE JAY. 7. EAST-INDIA BLUE JAY. 8. EGYPTIAN JERBOA.

Plate LXVI

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brown colour; the eyes are bright and ſparkling; and the ears are ſmall, round, and ſo thinly covered with hair, as to diſcloſe the colour of the fleſh. The top of the head, the neck, back, ſides, and tail, are cloathed with pretty long ſtiff hair, partly brown and partly duſky; the hair on the throat and belly is ſhorter, and browniſh, without any mixture; the legs, which are ſhort, are duſky or black; and there are five toes on each foot.

One of theſe animals was lately brought over to England. It ſometimes crept on it's belly, after the manner of a ſerpent; and, at others, it raiſed it's head, and appeared to walk on it's legs, and to contract it's body. It ſometimes reſted on it's hinder legs; and, when incenſed, erected it's briſtles in a ſurprizing manner. It was ſuffered to run about the houſe, and was very ſerviceable in clearing it of rats and mice.

Edwards mentions an Egyptian Ichneumon, meaſuring forty-two inches, which fell under his inſpection. With regard to ſhape and colour, it reſembled the former, except that it had a ſmall tuft of hair at the extremity of the tail; from which circumſtance he ſeems inclined to believe that they were of a different ſpecies, though it is more probable they were only varieties of the ſame ſpecies.

ICHNEUMON FLY. In the Linnæan ſyſtem, this is a genus of the hymenoptera claſs of inſects, comprehending no fewer than ſeventy-ſeven ſpecies; the diſtinguiſhing characters of which are theſe: the mouth has jaws without a tongue; the joints of the antennæ are more than thirty; the abdomen is generally petiolated; and the ſting is protruded from a cylindric bivalve ſheath.

Though there are many different kinds of this inſect, the moſt formidable, as well as the beſt known, is the common Ichneumon with four wings like the bee; a long ſlender black body; and a three-forked tail, conſiſting of briſtles, of which the two exterior are black, and the central one is red. This fly receives it's name from the little quadruped ſo deſtructive to the crocodile, to which it bears a ſtrong ſimilitude in it's courage and rapacity.

The inſtrument with which the Ichneumon Fly is furniſhed, though apparently feeble and ſlender, is nevertheleſs endued with great power and efficacy: there is ſcarcely any ſubſtance which it cannot pierce, and it is ſeldom unemployed. It is the weapon of defence, as well as that of attack; and aſſiſts the female in depoſiting her eggs whereever ſhe thinks proper to lay them. As it is an appendage principally employed for the latter purpoſe, the male is totally unprovided with it; while the female uſes it with great force and dexterity, brandiſhing it when caught from ſide to ſide, and often wounding her captors.

All the flies of this tribe are produced in a ſimilar manner; and owe their birth to the deſtruction of ſome other inſects, within whoſe bodies they have been depoſited, and on whoſe vitals they have preyed till they have arrived at maturity. There is no inſect whatever which the female will not attack in order to lodge her eggs in it's body: the caterpillar, the gnat, and even the ſpider itſelf, ſo formidable to others, is often made the unwilling ſupport of this deſtructive progeny.

About the middle of June, when other inſects are found in great abundance, the Ichneumon is ſeen flying buſily about, ſeeking proper objects whereon to depoſit her race. As there are various ſpecies of this fly, ſo they ſeem endued with different appetites: ſome place their eggs within the aurelia of a naſcent inſect; others depoſit them within the neſt which the waſp has curiouſly contrived for it's young; and, as both are produced at the ſame time, the offſpring of the Ichneumon not only devour the young waſps, but the whole ſupply of worms which the parent had carefully provided for their ſupport. However, the greater number of the Ichneumon tribe ſettle on the back of the caterpillar, darting at intervals their ſtings into it's body; and at every effort they depoſit an egg, while the wounded animal appears but little ſenſible of the injury it has ſuſtained. In this manner they leave from ſix to a dozen eggs within the ſpongy ſubſtance of the reptile's body; and then fly off, in order to commit farther depredations. In the mean time, the caterpillar thus irreparably injured ſeems to feed as voraciouſly as before, without any abatement of it's uſual activity; and, to appearance, is not at all affected by the internal enemies which are haſtening it's deſtruction in their darkſome abode. But they ſoon burſt from their egg ſtate, and begin to feed on the ſubſtance of their priſon: as they grow larger, they require a greater ſupply; till at laſt the animal, by whoſe vitals they are nouriſhed, being no longer able to ſupport them, dies a mere ſkeleton. It frequently, however, happens, that it ſurvives their worm-ſtate; and in that caſe they change into a chryſalis, incloſed in the caterpillar's body, till the time of their delivery approaches, when they burſt their cells, and fly away.

The Ichneumon Flies, though terrible to the inſect tribes, are nevertheleſs of the moſt eſſential ſervice to mankind. The millions of inſects which they deſtroy in the courſe of a ſingle ſummer are beyond conception; and, without ſuch animals, the fruits of the earth would vegetate only to furniſh a banquet for the inſect race, and the nobler ranks of animated nature be reduced to the utmoſt diſtreſs.

ICHNEUMON WASP. An appellation given by the old writers to that ſpecies of ſmall, ſlender-bodied Waſp, frequently found about mud-walls and dry banks. It is extremely different from the inſect properly called the Ichneumon, being in reality a true Waſp, mottled with black and yellow, after the manner of the common kind.

ICHTHYOCOLLA PISCIS. A large fiſh of the ſturgeon kind, from which the drug called iſinglaſs is made. See ISINGLASS FISH.

ICTERUS. A name commonly given to the jaundice-bird, belonging to the turdus kind.

ICTERUS, INDIAN BLACK-HEADED; the Oriolus Melanocephalus of Linnæus. This bird is about the ſize of the thruſh; the bill is of a browniſh white or dirty fleſh-colour; and the head and under-ſide of the neck are black. The whole body, the covert-feathers of the wings, and the greateſt part of the tail, are of a fine bright yellow hue; the greater quill-feathers are black, with yellow edges; and on the upper part of the ridge of the wings there is a ſlight mixture of yellow and black. The tail is compoſed of twelve yellow feathers of equal lengths, the two middlemoſt having each a tranſverſe black bar, about an inch broad, at their tips; the legs and feet are of a dull blueiſh black colour; there are four toes on each foot; and the claws are black, and pretty ſtrong. This curious bird was firſt figured and deſcribed by Edwards, who ſays that it was imported from Bengal.

JEAN-

JEAN-CAPELLE. An appellation given by ſome naturaliſts to the Faber Indicus, or Indian Doree of authors; more expreſſively named by Artedi the Zeus with a bifid tail.

JECARINUS PISCIS. A name given by Gaza, and ſome other ichthyologiſts, to the fiſh more commonly called the Hepatus Piſcis; and, by ſome, the Jecur Marinum.

JENDAYA. A Brazilian bird of the paroquette kind, about the ſize of the blackbird. The beak and legs are black; the back, wings, and tail, are of a blueiſh green colour; the tips of the wings are blackiſh; and the head, neck, and breaſt, are of a pale yellow hue, with an admixture of orange.

JENTLING. A fiſh caught in the Danube, and ſeveral other German rivers; called by the natives Scheat, Jent, and Koppen; and, by Geſner, Capito Cæruleus, the blue chub.

JERBOA. A genus of animals with two cutting-teeth in each jaw, two very ſhort fore-legs, two very long hind-legs reſembling thoſe of cloven-footed water-fowl, and a very long tail tufted at the extremity. There are ſeveral ſpecies.

Jerboa, Egyptian; the Mus Jaculus of Linnæus. This ſpecies has dark full eyes, long whiſkers, and broad erect ears. It is about the ſize of a large rat; the head ſomewhat reſembles that of the rabbit; and there are two cutting-teeth in each jaw. The tail, which is about ten inches long, is terminated by a tuft of black hair; the tip of which is white, but the reſt ſhort, brown, and rough. The head, back, ſides, and thighs, are covered with long ſoft hairs, aſh-coloured at the bottom, and of a pale tawny hue at the points; and the breaſt and belly are whitiſh. But the legs of this animal particularly merit attention: the fore-legs, which are not more than an inch long, have each five toes, the inner or thumb being hardly viſible, but that, as well as the reſt, is furniſhed with a ſharp claw; while the hinder legs are two inches and a quarter long, covered with ſhort hair, and exactly reſemble thoſe of a bird, containing each only three toes, all furniſhed with claws, of which the middlemoſt is the longeſt.

This animal inhabits Egypt, Barbary, Paleſtine, and the deſarts between Balſora and Aleppo. It is as ſingular in it's motions as in it's form: it always ſtands or walks on it's hind-legs only; while it's fore-paws, like thoſe of the ſquirrel, perform the offices of hands, and convey it's food to it's mouth. When diſturbed or purſued, it often ſprings ſix or ſeven feet high from the ground; and moves ſo very ſwiftly, that ſcarcely any other quadruped is able to overtake it. It is a lively and inoffenſive creature; feeds entirely on vegetables; and burrows in the ground like the rabbit.

In the year 1770, two of theſe little animals were exhibited in London, which burrowed almoſt through the brick wall of the room in which they were confined. They left their dormitories at night, and roved abroad in queſt of food they generally ſlept, rolled up like a ball, in the day-time; and, when touched, emitted a plaintive, feeble note.

Theſe creatures frequently conſtitute ſome part of an Arabian banquet. In that country they are called Daman Iſrael, or the Lamb of Iſrael: and Bochart diſplays great ingenuity and erudition in endeavouring to prove that the Jerboa is the Saphan of Holy Writ.

Jerboa, Siberian. This ſpecies has very long whiſkers; and long, narrow, tranſparent ears. Each of the fore-feet has five toes; and each of the hind three pointing forwards, and a fourth behind, about an inch above the heel. The upper part of the body is of a tawny colour, the loweſt being whitiſh; and in the ſhape of it's body, legs, and tail, it perfectly reſembles the Egyptian Jerboa. It inhabits Siberia and Tartary; and is alſo found in Barbary and Syria, and even as far as India. It is extremely active in it's diſpoſition, and more expert in digging than the rabbit itſelf. When purſued, and unable to eſcape through ſwiftneſs, it inſtantly makes a hole in the ground, in which it ſometimes buries itſelf deep enough to find ſecurity before it's enemies can come up with it. In ſome places, the burrows formed by theſe animals are ſo numerous as to render travelling dangerous, the horſes frequently ſtumbling into them unawares.

Theſe creatures are extremely provident: they cut graſs, leave it in little heaps to dry, and carry it afterwards into their burrows, where it not only ſupplies them with food, but renders their habitations warm for their young during the rigours of winter. They are eaſily tamed; and, when confined, do not refuſe animal food, though in a ſtate of nature they ſubſiſt wholly on vegetables. When confined to any particular place, they always ſeek the warmeſt corner; and generally prognoſticate the approach of bad weather by wrapping themſelves up in whatever warm materials they can find.

In a wild ſtate, they become the prey of all the leſſer rapacious animals. They breed often during the ſummer; and probably bring forth eight at a time, as the female is furniſhed with as many teats. They ſeem to paſs the whole winter without nouriſhment. About Aſtracan, they ſometimes make their appearance in a warm day in the month of February; but return to their holes whenever they feel the actings of the cold.

Jerboa, Cape. The length of this ſpecies, from the noſe to the tail, is upwards of fourteen inches; the tail itſelf is near fifteen inches long; and the ears are nearly three. The head is ſhort and broad; the eyes are large; and the whiſkers are full and long. The fore-legs are ſhort, and furniſhed with five toes on each; and the hind-legs, which are long, have four toes a piece. The body is of a tawny colour above, and cinereous below, mixed with long hairs pointed with black; and two-thirds of the tail are tawny, the reſt being black.

This ſpecies inhabits the lofty mountains to the north of the Cape of Good Hope: the Hottentots call it Aerdmannetje; and the Dutch Springen Haas, or the jumping hare. It is very ſtrong for it's ſize, and ſometimes leaps twenty or thirty feet at a bound. When feeding, it ſits upright, with it's legs extended horizontally, and it's back bent. It carries it's food to it's mouth by means of it's fore-feet; and likewiſe burrows with them more expeditiouſly than any of it's kind.

Jerboa, Indian. This animal has a ſlender noſe, and large prominent eyes; it's ears are broad, erect, ſemipellucid, and about an inch and a half long, with a tuft of hair between them; and there are two ſlender canine teeth and two cutting ones in each jaw. It has four long ſlender toes, and a diſtinct thumb on each foot; and the claws, which are ſharp-pointed, are all attached to the ſkin, except thoſe of the two interior toes of the hind-feet. The hair on the legs and feet is ſhort, white, and thinly ſcattered; and the tail is almoſt naked, that part

part next the body being round and ſcaly like that of the rat.

This ſpecies, which is a native of India, is about ſix inches long; and it's hair, which is ſoft and downy, is cinereous mixed with tawny.

Jerboa, Torrid. This creature has long whiſkers, naked open ears, and four toes on each of the fore-feet; the hind-feet, which are as long as the body, are thick, ſtrong, and thinly haired, with five toes on each; the tail, which is about the length of the body, is very thin of hair; the upper part of the body is yellow; and the lower is white.

This ſpecies is no larger than a common mouſe; and, according to Linnæus, the only naturaliſt who mentions it, is found only in the torrid zone.

JESUS. An appellation given by the natives of Dantzic to the fiſh called by Geſner and others the blue chub or capito cæruleus.

IGNAVUS. A term uſed by ſome authors to expreſs the creature commonly called the ſloth in England.

IGUANA. An animal of the lizard kind, of which there are ſeveral ſpecies.

The common Iguana is about five feet long; the body is as thick as a man's thigh; the ſkin is covered with ſmall ſcales like thoſe of a ſerpent; and the back is furniſhed with a row of erect prickles, reſembling the teeth of a ſaw. The eyes ſeem to be but half opened, except when the creature is irritated, and then they appear large and ſparkling; both the jaws are full of very ſharp teeth; and it's bite is dangerous, though not venomous. The male has a ſkin depending from the throat, which reaches down to the breaſt; and, when provoked, the Iguana puffs it up like a bladder. The female is conſiderably leſs than the male: the former is green, and the latter aſh-coloured.

The fleſh of theſe animals may be regarded as the greateſt delicacy of Africa and America. The ſportſmen of thoſe climates hunt the Iguana in the ſame manner as the Europeans do the pheaſant or the hare. At the beginning of the vernal ſeaſon, when the great floods of the tropical climates are dried up, and vegetation ſtarts into univerſal verdure, the hunters ſally forth with a nooſe and a ſtick, along the ſides of the rivers, in order to catch the Iguana. This animal, though apparently formed for attack, is one of the moſt innocent in nature, living among trees, or ſporting in the water, without ever offering to offend; there, having fed on the flowers of the mahot, and the leaves of the mapore, that fringe the banks of the tropical ſtreams, it repoſes on the branches of ſuch trees as overhang the water. On land, the Iguana is ſwift of foot; but, when once in poſſeſſion of a tree, it ſeems conſcious of the ſecurity of it's ſituation, and never offers to ſtir unleſs rouſed: hence the ſportſman has no great difficulty in finding it, and as eaſily faſtens his nooſe round it's neck. If it's head be reclined in ſuch a manner that the nooſe cannot readily be faſtened, by ſtriking the animal with a ſtick on the noſe, it lifts up it's head, which in ſome meaſure aſſiſts the operation; and in this way it is dragged from it's protecting tree, and killed by repeated blows on the head.

About the month of May the females proceed to the ſea-ſide, in order to lay their eggs, the males accompanying them. The number of their eggs is from thirteen to twenty-five, but they are not all laid at once: they are as large as thoſe of the pigeon; their ſhells, which are white and ſoft, contain no white, and never become hard by boiling. The French pretend that they are much better taſted than thoſe of pullets; and that they are proper to be mixed with all ſorts of ſauces. Theſe eggs are laid in the ſand; and, after being carefully covered over, are left to be hatched by the genial warmth of the ſun.

Iguana of Surinam. This ſpecies, which has a large ſkin under the throat, and a row of teeth or thorns on the upper part of the body, reſembles the common Iguana in ſhape and colour; but differs from it in having prickles on the tail, and wrinkles or folds in the bag under the throat. The back and ſides of the belly are brown mixed with blue; and the neck is ſprinkled with blackiſh ſpots. Above the ſides the colour is more bright; and the whole trunk of the body is covered with very thin ſcales. The thighs, legs, and feet, are of a dull blue colour; and the toes, which are of a cheſnut hue, are armed with ſharp crooked claws.

Iguana of Ceylon. This animal has a large, thick head, with warts or tubercles over the eyes; the forehead is covered with blue ſcales; and the eyes are large and ſparkling. The ears are fringed with ſmall eminences, which exhibit the appearance of eye-lids; the jaws are armed with ſmall teeth; and underneath there are prickly ſcales of a bright blue colour. The upper part of the body is covered with large ſcales, encircled with broad whitiſh ſtreaks; and the belly is of a very pale blue colour.

This creatute can erect and depreſs the row of ſpines on it's body at pleaſure: theſe ſpines are of a pale blue colour, and reach along the back to the tail. The female is furniſhed with a double row of ſpines, which reach as far as the thighs, and then diſappear.

Iguana of Formosa. The head of this ſpecies is variegated with ſcales of bay, brown, grey, and cinereous. The ſcales under the body are of a duſky grey colour; but the bag under the throat, the hinder thighs, the paws, and the tail, are encircled with large bright grey ſtreaks; and the forepart of the bag under the throat, as well as the top of the back, are armed with large prickles, which on the latter reach to the tail. The fleſh of this animal is eſteemed very delicious.

Formoſa affords another variety of the Iguana, of an inferior ſize, and with two rows of teeth running from the top of the neck to the middle of the tail. The bag under the throat is connected to the lower jaw; and that, as well as the head, belly, legs, feet, and tail, are of a deep blue colour; and the back is covered with thin ſmall ſcales of a dun grey.

Iguana of New Spain. This ſpecies, like the other congenerous animals, is armed on the back with large teeth or prickles, covered with ſmall thin ſcales of a rhomboidal figure, of a greyiſh and reddiſh colour undulated with bay brown. The head, and the bag under the throat, are a bright grey, the latter being marbled with black; the tail is thick at the root, long, and ſlender at the end; the jaws are furniſhed with ſmall teeth; and on the ſide of the lower, beneath the ear, there is a ſort of white button reſembling a flattened wart.

JIBOYA. A monſtrous ſerpent inhabiting Java and Brazil, which Legaut affirms he has ſeen fifty feet long: nor is this gentleman ſingular in his report, many of the miſſionaries corroborating his aſſertion; and, as a farther proof, we have the con-

current teſtimony of hiſtorians. However, the largeſt animal of this kind imported into Europe was only thirty-ſix feet long; but it is probable that much larger have been ſeen and deſtroyed before they were judged ſufficiently curious to be ſent ſo far for the inſpection of the naturaliſt. The teeth of this ſerpent are ſmall in proportion to it's ſize; nor does the creature uſe them, even when it ſeizes the ſmalleſt prey. It lies in wait for wild animals near ſome path, throws itſelf on them, and encircles them ſo cloſely as to break all their bones; then moiſtening their whole bodies over with it's ſaliva, renders them fit for deglutition, and thus ſwallows them entire.

JIYA. An American animal of the otter kind, called alſo Carigueibeiu. It is about the ſize of the ſpaniel, and of the amphibious kind of quadrupeds. The head, which is round, reſembles that of the cat, but the noſe is ſomewhat pointed; the eyes are black; the ears are roundiſh, and placed very low, as in the otter; and it has a ſort of beard or whiſkers, compoſed of a few ſtiff hairs. The feet are all furniſhed with five toes, the interior being the ſmalleſt: the hair is ſoft, ſhort, and black, except on the head, where it is brown; and under the throat, where there is a yellow ſpot. This creature feeds on fiſhes, and ſome other animals; and it's voice reſembles that of a puppy.

ILIVILIHU. An appellation given by the natives of the Philippine Iſlands to a very remarkable bird common in that country. Ornithologiſts generally diſtinguiſh it by the name of the coturnix parvula montana, the ſmall mountain quail: and indeed, in every eſſential character, it reſembles the quail; but it's colours are more beautifully variegated; and it is ſmaller than the ſparrow. It commonly reſides in mountainous places; and it's fleſh is eſteemed a peculiar delicacy.

IMAGO. A term uſed by Linnæus to expreſs the third ſtate of inſects, when they appear in their proper ſhapes and colours, and undergo no more transformations.

IMBER. A name ſometimes given to that ſpecies of gooſe called alſo the ember and the fluder.

IMPERIAL CROWN. A ſpecies of the voluta genus of ſhells with a ſharp clavicle.

INK-FISH. See CUTTLE-FISH, and SEPIA.

INSAG. An appellation given by the natives of the Philippine Iſlands to a ſpecies of parrot common in the ſylvan parts of that country. It's colours are the moſt beautiful in nature; the body being a very vivid green, and the head a fine florid red.

INSECTS. A claſs of animals ſo called from the Latin *In*, and *Seco*, I Cut; becauſe, in many of theſe tribes, the body ſeems to be cut or divided into two. The diſtinguiſhing characters of inſects are theſe: their bodies are covered with a ſort of bony ſubſtance inſtead of ſkin; and their heads are furniſhed with antennæ, called horns.

Among the infinite variety of objects which nature exhibits to the inſpection of the curious, Inſects, though the ſmalleſt in the ſcale of being, are certainly not the leaſt intereſting. Though their minuteneſs may, at firſt view, give colour to an idea of their inſignificance; and though the untutored part of mankind may regard them as the reſult of chance, or the refuſe of nature; he who views them with due attention, and reflects on the art and mechaniſm of their ſtructure, where ſuch a number of veſſels, fluids, and movements, are collected into one point, frequently inviſible to the naked eye; cannot but acknowledge them to have been formed by the hand of unerring Providence, and perfectly adapted for that ſphere in exiſtence which they are deſtined to fill.

Thoſe animals which chiefly attract our notice by their magnitude, are but the ſmalleſt part of animated nature: the whole earth ſwarms with living beings; every plant, grain, and leaf, ſupports the lives of thouſands. Vegetables ſeem, at firſt ſight, to be the parts of organized nature which are produced in the greateſt abundance; but, on a minuter inſpection, we find each ſupporting numberleſs creatures, which fill up the various gradations of youth, vigour, and old age, in the ſpace of a few days, or a few months at moſt. Vegetables are generally produced but once in a ſeaſon; but, with reſpect to inſects, eſpecially of the ſmaller kinds, a ſingle ſummer ſuffices for ſeveral generations: theſe therefore would multiply in greater abundance than the plants on which they ſubſiſt, were they not deſtroyed by other animals, and not unfrequently by each other. Spiders feed on flies; birds devour ſpiders; and birds, in their turn, are the food of man, as well as of every beaſt of prey. This wiſe diſpoſition of inſtincts implanted in every claſs of animated nature, prevents the earth from being overſtocked with any particular kind, and preſerves a juſt balance between the numbers and neceſſities of every tribe.

An Inſect may be defined as a little animal without blood, bones, or cartilages; furniſhed with a trunk, or elſe a mouth, opening lengthwiſe; with eyes deſtitute of coverings, and lungs opening on the ſides. This definition will comprehend the whole claſs of Inſects, either with or without wings; either in their caterpillar or butterfly ſtate; either produced in the ordinary method of generation between male and female, or from an animal that is itſelf both male and female, or from the ſame animal cut into ſeveral parts, and each part reproducing a perfect animal.

Hence it will appear, that in this claſs of nature there are numerous diſtinctions, and that no general deſcription will ſerve for all. Almoſt every ſpecies has it's own diſtinct hiſtory; and exhibits manners, appetites, and modes of propagation, peculiar to itſelf. In the larger ranks of exiſtence, two animals, nearly reſembling each other in form, will be found to have a ſimilar hiſtory; but here, Inſects almoſt entirely ſimilar will often be found perfectly diſſimilar, as well in their manner of bringing forth and ſubſiſting, as in the changes which they undergo during their very limited lives. Thus, as this claſs is prolific beyond computation, ſo are it's varieties multiplied beyond the power of deſcription. To enumerate all the different ſpecies of flies or moths, would be a fruitleſs attempt; but to give a hiſtory of all would be utterly impracticable. So various are the appetites, the manners, and the lives, of this humble claſs of beings, that every ſpecies requires it's diſtinct hiſtory.

An exact plan, therefore, of nature's operations, in this minute ſet of creatures, is not to be expected: and yet ſuch a general picture may be given, as is ſufficient to evince the protection which Providence affords it's ſmalleſt as well as largeſt productions; and to diſplay that admirable circulation in nature, by which one kind of beings finds ſubſiſtence from the deſtruction of another, and by which life is continued without a pauſe in every part of the creation.

In a curſory inſpection of the inſect tribes, the firſt

firſt animals which preſent themſelves are thoſe that are deſtitute of wings, and appear crawling about on every plant, and every ſpot of earth examined with any degree of attention. Some of theſe never acquire wings at any period of their exiſtence, but are deſtined to creep on the vegetables or ſpots of earth where they are ſtationed for their whole lives: on the contrary, others are candidates for a happier exiſtence; and only wait for their naſcent wings, when they may be ſaid to arrive at their moſt perfect ſtate. Thoſe which are never furniſhed with wings, but creep about till they die, may properly be conſidered as conſtituting the firſt claſs of inſects: all theſe (the flea and the wood-louſe excepted) are produced from eggs; and, when once they break the ſhells, never experience any farther change, but continue increaſing in ſize till the expiration of their lives. Thus the louſe and the ſpider are produced from an egg; and, after excluſion, do not undergo any farther alteration, but, like the chicken or the duck, remain invariably the ſame from their birth to their diſſolution.

The ſecond order of Inſects is compoſed of ſuch as have wings; but which, when produced from the eggs, have thoſe wings ſo caſed up as to be concealed: this covering up of the wings does not prevent the creatures from running, leaping, and moving, with their natural celerity; but, when the caſes burſt, and the wings have the power of expanſion, all the motions of the animals become more extenſive, and they arrive at full perfection. In this manner the dragon-fly, the graſhopper, and the earwig, have their wings at firſt confined; but, when the ſkins burſt, they are immediately expanded, and the animals purſue the purpoſes for which they were produced.

The moth and the butterfly kind, which may be conſidered as the third order of Inſects, have all four wings, each covered with a mealy ſubſtance of various colours, which is eaſily rubbed off; and, if examined by the microſcope, will appear like ſcales, with which the wings are elegantly embroidered. Theſe Inſects alſo are produced in a manner peculiar to themſelves: each of them is firſt hatched from an egg, from whence iſſues a caterpillar that often ſheds it's ſkin; and, after having diveſted itſelf, for the laſt time, of it's exuviæ, aſſumes a new covering, called a chryſalis, in which it continues hid till it comes forth in it's winged ſtate.

The fourth order of Inſects proceeds from thoſe which, though winged, originate from worms, and not from caterpillars; yet undergo changes ſimilar to thoſe of the butterfly tribe. Each is firſt excluded from the egg like a worm, and then becomes a chryſalis. In ſome, the wings and legs are ſeen; in others, the animals are quite detached from the cones in which they are concealed: but all at length burſt their priſons, and come forth perfect; ſome furniſhed with two, and others with four wings. The wings of all theſe differ from the butterfly and moth kind, in being deſtitute of mealy ſcales. In this claſs may be ranked the numerous tribes of gnats, beetles, flies, and bees.

To the four orders of Inſects already enumerated, may be added a fifth, conſiſting of a numerous tribe of modern diſcovery, to which naturaliſts have applied the name of Zoophytes. For the production of theſe, the ordinary forms of generation are unneceſſary; they may be propagated by diſſection: ſome of them, though cut into a hundred parts, will ſtill retain the vital principle in each, and every individual part will in a ſhort time produce a perfect animal. Theſe indeed appear to be a ſet of exiſtences placed between animals and vegetables, and formed to connect animated and inſenſible nature: to this claſs belong the polypus, the earth-worm, and all the varieties of the ſea-nettle.

Having exhibited a general diſtribution of Inſects, we ſhall next enquire into ſome of the moſt diſtinguiſhing characters and qualities of the whole race.

Some Inſects attract our notice by the beauty of their colourings: butterflies, cantharides, and all the ſhining flies, exhibit ſufficient proofs that Nature has not been ſparing in her embelliſhments on this tribe of beings. The ſame wiſdom which has rendered ſome Inſects beautiful, has alſo given others a ſufficient ſhare of ſtrength and armour for their neceſſary defence, or for the means of procuring their food: though they do not always catch what they lie in wait for, or avoid what is noxious, they are all provided with what is moſt eſſentially adapted for thoſe purpoſes. The common leech is furniſhed with ſtrong teeth; the waſp and the bee have powerful ſtings; and ſome ſnails are provided with ſuch ſtrong ſhells, that they are defended from external injuries, at the ſame time that their locomotive powers are not abridged. The moſt delicate Inſects, ſuch as caterpillars, are furniſhed with hairs, which ſerve to break the force of the ſhocks they are liable to receive, as well as to weaken the blows that might otherwiſe injure them. The generality of Inſects are quick in flight to avoid impending danger; ſome by the aſſiſtance of their wings; and others by means of threads, which they can throw out, and hang by till the danger is paſt: others again, like the graſhopper, are enabled to leap to a very conſiderable diſtance. And thus all, however minute, have ſome means by which they conſult their own preſervation.

Nor is our admiration leſs excited by a review of the various organs by which ſome animals are aſſiſted to live, and the inſtruments they uſe, according to their various profeſſions. The ſilk-worm is excellently formed for ſpinning, having two diſtaffs, and fingers to draw out the thread; the ſpider can fabricate nets and webs, and is therefore provided by nature with implements for that purpoſe; the waſp, by means of two ſmall ſaws which ſpring from the angles of the mouth on each ſide, procures what materials are neceſſary for the conſtruction of it's cell; while bees are furniſhed with a variety of weapons indiſpenſably neceſſary in the formation of their combs and the collection of their honey: the trunk of the bee, indeed, is more wonderful than that of the elephant; the latter is only adapted to the private convenience of the animal; but the trunk of the bee is fitted for extracting honied balſam even from herbs of the moſt deleterious nature.

The ſtructure of the eye in Inſects is remarkably different from that of other creatures in a variety of reſpects: it is defended by it's own rigidity againſt external injuries; and it's cornea is all over divided into lenticular facets, which, viewed by the help of the microſcope, appear like a beautiful piece of lattice-work; each opening in it being of ſuch a nature, that, when looked through, objects appear inverted. This mechaniſm alone ſupplies the place of the cryſtalline humour, which is never

ver found in Inſects. Spiders have generally eight eyes; and flies may be ſaid to have as many organs of ſight as there are perforations in the cornea, or external covering of the eye. Animals in general are obliged to turn their eyes different ways to behold objects; but thoſe of flies are ſo contrived, as to admit every neighbouring object at once. In order to keep their eyes clean, they are provided with two antennæ or feelers: ſome, however, are of opinion, that they cleanſe their eyes with their fore-legs as well as feelers; nor does this conjecture ſeem ill founded, when we conſider that in ſome ſorts, particularly the fleſh-fly, the feelers are too ſhort to anſwer this purpoſe, and therefore the legs alone can ſupply this defect. Nor does the mechaniſm of their feet leſs deſerve our attention. The hind-legs of amphibious Inſects, ſuch as water-beetles, which are ſometimes obliged to live on land as well as in the water, are formed with commodious flat joints; while griſtles, which are placed at the extremity of the limb on each ſide, ſupply the place of oars. In thoſe Inſects whoſe motions are performed by leaping, ſuch as the graſhopper and the cricket, the legs are ſtrong and brawny; thoſe, on the contrary, which uſe their claws in perforating the earth, have ſuch members adapted, by their ſtrength and ſwiftneſs, for that purpoſe. There are even ſome Inſects which tranſport themſelves from one place to another in a manner wholly unknown; thoſe generated in ſtagnant waters are often found in new pits and ponds, and ſometimes on the tops of houſes and ſpires; and ſpiders frequently ſoar with their webs to the ſummits of the moſt lofty edifices.

Such Inſects as are furniſhed with wings, have tendons to expand and ſtrengthen them: thoſe which are provided with four, as the ephemera fly, uſe the uttermoſt pair rather as caſes to defend the interior wings, than as auxiliaries in flight. When the Inſect is at reſt, the inner wings are generally cloſed up; nor is it without ſome efforts that the little animal is able to unfold them. Such Inſects as have only two wings, are ſupplied with two little balls, or poiſers, joined to the body under the hinder part of each wing, which ſerve to keep them ſteady, and in ſome meaſure counteract the changes of the air, which at every variation might carry them off in it's current. If one of the balancers be cut off, the Inſect will ſoon fall to the ground; but if both of them be cut away, it will ſtill continue to fly, though at the direction of every breeze.

Almoſt all ſorts of Inſects are generated, like larger animals, from eggs; and theſe are at firſt incloſed in a ſingle or double covering, which opens when the animal is old and ſtrong enough to pierce through it. When the young break their coverings at their firſt ingreſs into the world, the parents are ſaid to be viviparous; as for inſtance, the millepedes: when the old ones bring forth their young in a covering where they are doomed to remain ſome time, like the ſilk-worm, they are ſaid to be oviparous.

Inſects of the oviparous kind always depoſit their eggs in proper places, where they are hatched by a requiſite degree of heat. No Inſects abandon their eggs to chance; nor are they ever miſtaken in laying them in ſuch ſituations where they may receive proper nouriſhment as ſoon as they are hatched. Thoſe caterpillars which feed on cabbages, are never found on willows; nor ſuch as feed on willows, on cabbages. The moth delights to lodge among woollen ſtuffs, or papers; but never takes up it's reſidence on plants, nor in mud. Hence it is evident, that inſtinct, not chance, directs their choice.

When ſome of theſe eggs are hatched, the young appear in their perfect and permanent ſhape; but the greater number of Inſects paſs through different ſtates, and ſucceſſively aſſume the figure of two or three animals which have no reſemblance to each other. From the egg of the gnat proceed divers animalcula, which paſs through three different ſtates: in the firſt place, they live in the water; then they change to amphibious animals; and, laſtly, they become denizens of the ſky.

Summer is the time ſuited to the pleaſures of Inſects: few of them live more than a ſingle ſeaſon; and ſome only a few hours. Such, however, as are long-lived, take the neceſſary precautions to provide for their ſafety and ſubſiſtence during the winter, fixing on the moſt convenient ſituations for ſpending that interval, and laying in a ſufficient quantity of food. But the greateſt number ſleep during the continuance of the cold ſeaſon, and therefore do not ſtand in need of proviſions. Some caterpillars, for inſtance, having fed during the ſummer, retire, at the approach of winter, to places of ſecurity; where ſpinning threads like cobwebs, they ſuſpend themſelves, covered with fictitious coats, which at once ſerve to keep them warm and to guard them from external injuries: in this torpid ſtate they continue till the returning ſun calls them to new life; then they expand their wings, and ſeem wholly employed in propagating their kind.

There are ſome Inſects, however, which lay up proviſions for the winter; of which the bee, and the ant of foreign countries, are remarkable inſtances. The waſp, the hornet, and the wild bee, are no leſs aſſiduous in laying in a proper ſtock of food, and fitting up commodious apartments: but this is wholly for the ſake of their young; for they deſert their neſts in winter, leave their offſpring furniſhed with every convenience, and retire to ſome other ſituations, where it is probable they live without food.

But notwithſtanding the admirable habits and inſtincts obſervable in the Inſect tribes, it muſt be confeſſed, that in every reſpect they deſerve to be conſidered as the laſt and loweſt rank in animated nature. As, in mechanics, the moſt complicated machines are required to perform the niceſt operations; ſo, in anatomy, the nobleſt animals are moſt variouſly and wonderfully made. Of all living exiſtences, man exhibits the moſt aſtoniſhing variety in his internal conformation; quadrupeds next ſucceed; and other animals follow in proportion to their powers and excellencies. Inſects, of all others, ſeem to be the moſt imperfectly formed; many of them will live a conſiderable time after being deprived of thoſe organs which are eſſentially neceſſary to life in the higher ranks of nature; and the caterpillar will continue to exiſt when deprived even of it's heart and lungs.

But it is not from their conformation alone that Inſects are inferior to other animals, but from their inſtincts alſo. It is true that the ant and the bee preſent us with very ſtriking inſtances of aſſiduity and foreſight; but they fall very ſhort of thoſe proofs of ſagacity diſplayed by the hound or the horſe. A bee, when ſeparated from the ſwarm, is totally helpleſs, inactive, and incapable of giving the ſmalleſt variations to it's inſtincts: it has but one

one ſingle method of operation; and, if taken from that, can have recourſe to no other. In the purſuits of the hound, there appears ſomething like choice; but, in the labours of the bee, the whole has the ſemblance of neceſſity or compulſion.

Another argument of the imperfection of Inſects may be drawn from their amazing numbers. It is a rule which univerſally obtains, that the nobler animals are ſlowly produced, and that Nature acts with a kind of dignified œconomy; while the meaner births are laviſhed in profuſion, and thouſands are produced merely to ſupply the neceſſities of the more favourite objects of creation. All other animals are capable of ſome degree of education: their inſtincts may be ſuppreſſed or altered; the dog may be taught to fetch and carry; the bird to whiſtle a tune; and the ſerpent to dance: but the Inſect has only one mode of operating; no arts can divert it from it's inſtincts; and indeed it's whole life is too ſhort for receiving any portion of inſtruction.

If Inſects are regarded as bearing a relation to man, and as aſſiſting him in the pleaſures and neceſſities of life, they will, even in this reſpect, ſink in the compariſon with the larger tribes of animals. It is true, that the bee, the ſilk-worm, the cochineal-fly, and the cantharides, are of the moſt eſſential ſervice; but how many others of this claſs are either noxious, or wholly uſeleſs! Even in the moſt cultivated countries, where injurious animals have been reduced by repeated aſſiduity, the Inſect tribes ſtill maintain their ground, and are often unwelcome intruders on the fruits of human induſtry. But, in more uncultivated regions, their annoyances and devaſtations are unbounded. What a miſerable life muſt the Laplanders lead, as well as the natives of ſome parts of America, where a candle is no ſooner lighted, than the Inſect-ſwarms inſtantly extinguiſh it; where the inhabitants are obliged to ſmear their bodies and faces with tar, or ſome ſimilar compoſition, to protect them from the punctures of theſe minute enemies; and where, though millions are deſtroyed, millions conſtantly ſucceed, and render life ſtill more uncomfortable than the climate itſelf naturally would, with all it's attendant horrors!

INSECT, MUSK. A term uſed by ſome naturaliſts in a vague ſenſe, to expreſs the capricorn, or muſk-beetle: however, there are other Inſects which ſmell as ſtrongly of that perfume; particularly a ſmall kind of bee, which frequents the ranunculus and dandelion; and a hexapode worm, which feeds on the gallium luteum.

INTESTINA. A genus of worms in the Linnæan ſyſtem; the characters of which are, that they are ſimple, naked animals, without limbs; ſome pierced with lateral holes, or a kind of pores; and others entirely imperforated. The ſubordinate genera of this claſs of worms are the gordius, aſcaris, lumbricus, faſciola, ſipunculus, hirudo, and myxine, comprehending twenty-four different ſpecies.

JONÆ PISCIS. An appellation given by many naturaliſts to the common ſhark, the Canis Carcharius of Linnæus. This name ſeems to have been adopted from an opinion that this fiſh ſwallowed up the prophet Jonas; but there are many objections againſt this conjecture.

JOPPA WHELK. A name ſometimes uſed to expreſs a ſpecies of the buccinum.

JOSO. A ſmall marine fiſh of the ſea-gudgeon or rock-fiſh kind, common in the Mediterranean, and called gobius albus by ſome ichthyologiſts.

IPECA GUACA. A Brazilian bird of the duck kind. It is of a middle ſize between the duck and the gooſe; and is generally kept tame, as well for the ſake of it's eggs as it's fleſh.

IPECATI APOA. A Brazilian ſpecies of duck, to which the Portugueſe have given the name of Pata. It is nearly of the ſize of the gooſe, but exactly reſembles the duck in ſhape and figure.

IPECU. A Brazilian bird of the woodpecker kind, called by Ray Picus varius Brazilienſis. It is about the ſize of the common pigeon: the beak is ſtraight, very ſharp, and hard; with which it pierces trees, in the ſame manner as the congenerous European birds.

IPERAQUIBA. An appellation given by ſome authors to the remora or ſucking-fiſh.

ISABELLA. A name given by the French conchyologiſts to the beautiful pale brown voluta, ſo much eſteemed by ſome collectors of ſhells.

ISARUS. A term uſed by the ancients to expreſs the chamois-goat.

ISATIS. An animal of the fox kind, called by ſome authors the arctic fox. It's hair, which is ſofter than that of the common fox, is ſometimes white, and at others brown, and even blue; but is much longer in winter than in ſummer, which indeed is uſual with animals peculiar to cold climates.

The Iſatis is very common in all the hyperborean countries bordering on the Icy Sea, and is ſeldom ſeen but in the coldeſt climates. It is principally found in the mountains and naked regions of Norway, Siberia, and Lapland. In the ſhape of it's body, and the length of it's tail, it reſembles the fox; but, in the figure of it's head, and the poſition of it's eyes, it is more like the dog. Not being able to burrow on account of the froſt, it lives in the clifts of rocks; and two or three pair generally inhabit the ſame hole. It barks like the dog; and generally goes with young nine weeks.

Theſe animals, which poſſeſs all the cunning of the common fox, prey on young geeſe, ducks, and water-fowl, before they are fledged. In Greenland, they are compelled by neceſſity to feed on berries, ſhell-fiſh, or any ſubſtances which the ſea caſts up; while their principal food, in the north of Aſia and in Lapland, is the leming, or Lapland marmot. The fur of the Iſatis is of no value, unleſs the creature is killed in the winter ſeaſon.

ISINGLASS FISH. A ſpecies of the accipenſer or ſturgeon, diſtinguiſhed from the others by being deſtitute of the tubercles which appear on the body of the common ſturgeon.

Theſe fiſh, which are caught in great quantities in the Danube from October till January, ſeldom weigh leſs than fifty pounds each, and ſometimes upwards of four hundred. Their fleſh is ſoft, glutinous, and flabby; but it is ſometimes ſalted, and is then reckoned tolerable food. However, they are principally caught for the ſake of that valuable commodity called Iſinglaſs, which they furniſh in ſuch abundance, and which is made in the following manner. The ſkin, the entrails, the fins, and the tail of the fiſh, are cut into ſmall pieces; and, after macerating for ſome time in a ſufficient quantity of warm water, are boiled over a ſlow fire till they are diſſolved and reduced to a jelly: this jelly is ſpread on inſtruments made for the purpoſe; ſo that, in drying, it aſſumes the form of parchment; and, when perfectly dry, is rolled up in that ſhape in which we meet with it in the ſhops.

ITAIARA. A name given by ſome authors to a Brazilian fiſh of the turdus kind, more uſually known by that of jurun capeba. It's colours are extremely beautiful; and it's fleſh is excellently flavoured.

ITCH ANIMAL. A ſpecies of acarus, generally found in the puſtules of the Itch, and ſuppoſed by phyſicians to be the origin of the diſeaſe. When this animalcule is examined by a microſcope, it ſeems to reſemble the tortoiſe; being furniſhed with ſix feet, a ſharp head, and two ſmall horns at the extremity of the ſnout. It is very briſk and active; and occaſions ſuch an irritation of the part where it is lodged, as to oblige the patient to ſcratch it.

JUDDOCK. A common Engliſh name for the ſmall ſnipe, called by authors gallinago minima, and in ſome places the ged and jack-ſnipe.

JUGULAR FISH. A Linnæan name for a certain order of fiſhes; the general character of which is, that the ventral fins are placed before the pectoral ones. This order comprehends five genera, viz. the callionymus, uranoſcopus, trachinus, gadus, and blennius; including thirty-five ſubordinate ſpecies.

JULIS. A ſmall fiſh, about three inches long, caught principally in the vicinity of Genoa. The male is very beautifully painted: the back is green; the head is variegated with yellow and red; the lateral lines are broad, ſerrated, and of a fine gold colour; and the dorſal fin has ſeveral large ſpots of blue and red.

JUNCO. The claſſical name for the reed-ſparrow.

JUPAJUBA. A Brazilian bird reſembling the guira tantigina, called alſo the japu. It ſuſpends it's neſt, in a very ſurprizing manner, from the twigs of trees, in order to ſave it's eggs and young from ſerpents and predaceous birds.

JUPATUMA. A name given by ſome authors to the American animal more generally known by that of the opoſſum.

JURUCUA. A ſpecies of tortoiſe found in the Brazils, whoſe feet are ſhaped almoſt like wings, the fore ones being about ſix inches long, and the hind conſiderably ſhorter. The tail is ſhort, and of a conic figure; the eyes are large and black; and the mouth, which is deſtitute of teeth, reſembles the beak of a bird. It is frequently four feet long, and about three broad; and it's ribs, which are faſtened to the ſhell, are eight on each ſide, the middle ones being the longeſt. The fleſh and eggs of the Jurucua are of a very delicate taſte: the eggs are laid in holes on the ſea-ſhore; and, being covered with ſand, are hatched by the heat of the ſun. A number of whimſical figures generally run in various directions on the ſhell, the entire ground of which is uſually black and gloſſy.

JURUNCAPEBA. A marine fiſh of the turdus or wraſſe kind, caught among rocks about the ſhores of the Brazils, and called alſo itaiara. It is uſually five or ſix inches in length, and about a third part of it's length in breadth; it's mouth is extremely large and wide, and of a ſomewhat triangular figure; and it's fleſh is very delicious.

JURURA. A Brazilian ſpecies of tortoiſe, ſeldom exceeding ten fingers in breadth, and eight or nine in length. It can at pleaſure conceal it's whole body in the ſhell, or thruſt out it's head to the diſtance of two or three inches: the head is thick and long; the noſe is elevated and pointed; the mouth is large; the eyes are black; the feet are furniſhed with four long claws; the tail is ſhort and pointed; and the ſkin is rough and ſcaly. The upper ſhell is brown, and the lower yellow; and the eggs, which are white and round, are extremely well taſted.

IXALOS. A name given by Greek writers to the creature commonly known by that of the chamois-goat.

K.

KAALING. A ſpecies of ſtarling common in China and the Philippine Iſlands. It's back, eyes, legs, and beak, are yellow. It is eaſily tamed; and may be taught to ſing, and to imitate the human voice. In a ſtate of nature, it feeds on rice and inſects; but, when confined to a cage, will eat bread, and almoſt any kind of fruit.

KABBOS. An oriental fiſh of the muſtella kind, about two feet long, and deſtitute of ſcales. It's general colour is brown; but the ſnout is much paler than the reſt, and ſpotted with black. The head is of an obtuſe figure; and the eyes are placed very near it's extremity.

KAELT FISH. An Eaſt Indian fiſh which ſomewhat reſembles the pike, it's mouth being furniſhed with a great number of ſharp teeth, and having large bright eyes. It's belly and tail are of a purple colour; and it's back is brown. It meaſures about eighteen inches in length; it ſwims with great rapidity; and it's fleſh, though hard, is well flavoured.

KANGURU. An animal diſcovered by our Britiſh navigators on the weſtern ſide of New Holland, and as yet unknown in any other part of the world. Pennant refers it to the opoſſum kind; while other naturaliſts ſeem to conſider it as a ſpecies of jerboa. It has a ſmall oblong head, ſhaped like that of the fawn, and tapering from the eyes to the noſe; the upper lip is divided; the noſtrils are wide and patulous; the upper jaw is longer than the under, and both are furniſhed with whiſkers; the irides are duſky; the ears are erect, oblongly ovated, and covered with ſhort hairs. There are four broad cutting-teeth in the upper jaw; two long lanceolated teeth in the lower, pointing forwards; and four grinders in each jaw. The body increaſes in thickneſs to the rump; the belly is convex and large; the fore-legs are very ſhort;

ſhort; and the hind are almoſt the length of the whole body. On the fore-feet there are five toes, with large conic, ſtrong claws; and on the hind there are only three. The tail is very long, extending as far as the ears, thick at the baſe, and tapering to a point; and the hair is ſoft, and of an aſh-colour, but ſomewhat lighter on the belly than the back. The length of this animal is generally upwards of three feet; and the tail meaſures nearly thirty inches.

The Kanguru lurks among the unpaſtured graſs which covers the deſolate country it inhabits. It feeds entirely on vegetables; and walks wholly on it's hind-legs, uſing it's fore-feet only for the purpoſes of digging and carrying it's food to it's mouth. It appears to be extremely timid and harmleſs, as it flies at the ſight of a human creature with prodigious bounds. When in motion, it carries it's tail at right-angles with it's body; and no dog can arreſt it's flight. It's fleſh is reckoned wholeſome and palatable.

KARAGAN. An animal found in Great Tartary, ſtrongly reſembling the brant fox; of which it is either a variety, or very nearly allied to it.

KATA, of Syria. A bird of the grous kind, about the ſize of the partridge; and, with reſpect to ſhape, between that and the pigeon. The bill is of a light colour tipt with black, and ſhort and thick; the legs are white, and covered with feathers on their fore-parts; thoſe of the toes ſtand forwards; and there is a ſmall ſpur behind. The plumage round the eyes and the fore-part of the neck is of a light colour, except beneath the throat, where it is black. The breaſt is of a cinnamon hue, bounded at it's riſe and extremity by a black ring; the belly is white; and the back, as well as that part of the wings next to it, are of a mouſe-colour, with an admixture of bright yellow, white, and black. The long feathers of the wings are alſo of a mouſe-colour; thoſe on the rump are beautifully variegated with black, white, and yellow; and the tail, which is ſhort, terminates, like that of the pigeon, in two long, narrow, black feathers, exceeding the others about three inches.

During the months of May and June, theſe birds are very numerous about Aleppo. Their fleſh is black, dry, and hard; nevertheleſs, the Turks reckon it very delicious.

KERMES. Minute animals found in great abundance on ever-greens of the oak kind, and forming excreſcences of conſiderable utility both in the materia medica and the art of dyeing.

The Kermes is properly an inſect of the progall claſs, and of that genus whoſe figure reſembles a ſlightly truncated ſphere. It is found on a particular kind of the ilex, known by the name of the ilex aculeata cocciglandifera, which never riſes to any conſiderable height: it is very common in the more uncultivated parts of Provence and Languedoc; in Spain; and in the iſlands of the Archipelago, particularly Crete. The peaſants make their harveſt of theſe inſects from off the ilex at the proper ſeaſon.

But though the hiſtory of this drug is a ſubject which merits the attention of every naturaliſt, a number of years have elapſed ſince it has been examined with any degree of accuracy. De La Hire and Sedileau paved a way to it's inveſtigation by their hiſtory of the gall-inſect of the orange-tree; but all the advantages which might have been expected to flow from thence, were not ſoon obtained; nor was the reſemblance and the ſtrict analogy between the flat and the ſpherical gall-inſects ſo ſoon obſerved as might reaſonably have been expected.

When the Kermes has attained it's full growth, it appears like a ſmall ſhell fixed to the branches of this ſhrub, of a bright and ſhining colour reſembling that of a ripe plumb, and covered with the ſame ſort of powder which overſpreads that fruit: this powder is commonly called the flower of the Kermes.

According as the winter is more or leſs mild, the harveſt of Kermes is proportionably plentiful; and the natives of thoſe countries where they abound, always prognoſticate a fine ſeaſon when the ſpring has been free from froſts and fogs. It is obſerved that the loweſt and oldeſt ſhrubs are always moſt prolific in theſe inſects; and thoſe produced in maritime countries are invariably found to be larger and finer than ſuch as come from more inland parts.

It is no unuſual thing for the natives to have two harveſts of Kermes in one year: thoſe of the latter ſeaſon are ſmaller and leſs valuable than thoſe of the firſt; and are found not only on the branches, but alſo on the leaves of the ſhrub; exactly analogous to the cuſtom of all the gall-inſects, which leave the branches to feed on the leaves, where their yet tender trunks can find an eaſy entrance.

The Kermes is of the moſt eſſential ſervice in medicine: it is cardiac, deſiccative, and aſtringent; it fortifies the ſtomach, and prevents abortions. In the art of dyeing, it is of ſtill greater utility; it enters into the compoſition of the ſcarlet dye, and affords a moſt beautiful and permanent tinge.

There are ſeveral varieties of this valuable inſect, but all agreeing in the two grand characters of beauty and utility. See Coccus.

KESTREL; the Falco Tinnunculus of Linnæus. A beautiful bird of the hawk kind, called alſo the ſtannel and windhover. The male of this ſpecies is about fourteen inches in length, and two feet three inches in breadth. It's colours, at firſt ſight, diſtinguiſh it from all other hawks: the crown of the head, and the greater part of the tail, are of a fine light grey hue; and on the lower part of the latter there is a broad black bar, ſucceeded by white tips. The back and coverts of the wings are red, inclining to purple, and embelliſhed with elegant black ſpots; and the interior ſides of the quill-feathers are duſky, deeply indented with white. The whole under-ſide of the bird is of a pale ferruginous colour, ſpotted with black; and the cere and legs are yellow.

The female of this ſpecies weighs eleven ounces: her colours are leſs vivid than thoſe of the male; her breaſt is of a dirty white hue; and the centre of each feather has an oblong duſky ſtreak pointing downwards.

The Keſtrel breeds in the hollows of decayed trees, the holes of high rocks, towers, and ruinous buildings; and lays four eggs, which appear as if deeply beſmeared with red, through which a few ſpots of white are perceptible. It feeds on field-mice, ſmall birds, and inſects, which it poſſeſſes the faculty of diſcovering at a vaſt diſtance. This bird is frequently obſerved in the air, fixed to one place, and fanning itſelf with it's wings; at which times it is watching for it's prey. When falconry was faſhionable, the Keſtrel was tamed, and trained for catching ſmall birds and young partridges.

KID. A name given to the young of the goat kind. See Goat.

KIDDOW. The Engliſh appellation for a web-footed fowl common on the Britiſh ſhores; and called in different places the guillemot, the ſea-hen, and the ſkout.

KILCH. The German name for a fiſh of the albula kind, caught in the lakes of that country. It's fleſh is firm, of a delicate flavour, and very little different from that of the ferra.

KILLER. A creature of the cetaceous kind, ſo called by the fiſhermen of New England from the animoſity it ſhews to the whale. Though a congenerous animal, it is ſaid to ſurround the whale, and to attack it with all imaginable fury and violence. Some ſeize it behind; others attempt it before; till at laſt the large unwieldy creature is torn down, and affords a laſting proviſion to it's cruel deſtroyers. So ſtrong are theſe Killers, that one of them has been known to ſtop a dead whale which ſeveral boats were towing along, and to drag it to the bottom of the ocean.

KIMBULA. A ſpecies of crocodile found in the Iſland of Ceylon, of a very beautiful variegation of colours, being elegantly mottled with black ſhining ſpots of a velvet gloſs.

KINE. A term by which animals of the cow kind are frequently expreſſed.

KING FISH. An appellation ſometimes given to the opah, a fiſh of the doree kind. See OPAH.

KING-FISHER. A genus of birds of which there are various ſpecies. Their diſtinguiſhing characters are, that the bill is ſtraight, ſtrong, and ſharp-pointed; that the tongue is ſhort and pointed; and that the three loweſt joints of the exterior toe are connected to the middle one.

KING-FISHER, COMMON; the Alcedo Ipſida of Linnæus. This bird ſeems to unite in itſelf ſomewhat appertaining to almoſt every claſs. It poſſeſſes appetites for prey like the rapacious kinds; and an attachment to water, like the birds of that element. It alſo poſſeſſes the beautiful plumage of the peacock, the delicate ſhadings of the humming-bird, the ſhort legs of the ſwallow, and the bill of the crane.

The King-Fiſher is ſomewhat larger than the ſwallow: it's ſhape is clumſy; it's legs are very ſmall; and it's bill is diſproportionably long, being nearly two inches from the baſe to the tip, the upper chap black, and the lower yellow. But the beauty of this bird's colours amply compenſate for the inelegancy of it's form: the top of the head, and the coverts of the wings, are of a deep blackiſh green hue, ſpotted with bright azure; the back and tail are of the moſt refulgent azure; the belly is orange-coloured; and a broad mark of the ſame colour extends from the bill beyond the eyes, near which there is a large white ſpot. The tail, which is ſhort, conſiſts of twelve feathers of a rich deep blue; and the feet are a reddiſh yellow.

This is one of the moſt rapacious little animals that ſkims the deep: it is continually in action; and feeds on fiſhes, which it takes in ſurprizing quantities conſidering it's clumſy form and diminutive ſize. It is generally ſeen on the banks of rivers; and, like the oſprey, ſeizes it's prey by balancing itſelf at a certain diſtance above the water for a conſiderable ſpace, and then darting on the fiſh with unerring aim. In a clear day it's plumage exhibits an amazing diverſity of brilliant colours, while the bird itſelf remains ſuſpended in the air; and this extraordinary beauty has probably given riſe to various fictions.

This ſpecies is the Mute Halcyon of Ariſtotle, which he deſcribes with unuſual preciſion. After mentioning the particulars of this bird's figure, he ſubjoins a deſcription of the neſt, which appears as fabulous and extravagant as any ſtory the moſt inventive of the ancients ever delivered. He ſays it appeared like thoſe concretions which are formed by the ſea-water; that it reſembled the long-necked gourd; was hollow within; had a very narrow entrance; and that, if ever it overſet, the water could not enter: that it reſiſted any violence from iron, but could be broke with a blow from the hand; and that it was compoſed of the bones of the ſea-needle.

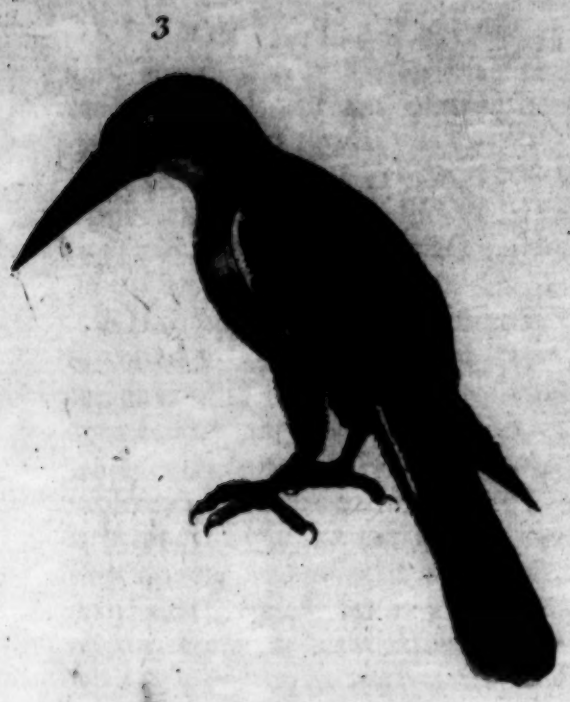
Ridiculous as this deſcription may appear, part of it is founded in truth. With regard to the form of the neſt, his account agrees exactly with that of Count Zinanni. Nor are the materials of which Ariſtotle ſays it is compoſed entirely of his own invention: the neſt of the King-Fiſher is always obſerved to be ſtrewed with the bones and ſcales of fiſhes, the fragments of it's food; and thoſe who will not admit it to be a bird which frequents the ſea, muſt not confine their ideas to this climate, but conſider, that thoſe birds which inhabit ſheltered places in the more rigorous latitudes, may endure expoſed ones in milder climates. Ariſtotle's obſervations were made in the Eaſt; and he admits that the Halcyon ſometimes aſcended rivers; but it is probable that this was in order to breed; for Zinanni informs us, that in Italy it breeds about the month of May, in the banks of ſtreams contiguous to the ſea; and, after the firſt hatch is reared, returns to lay a ſecond time in the ſame place.

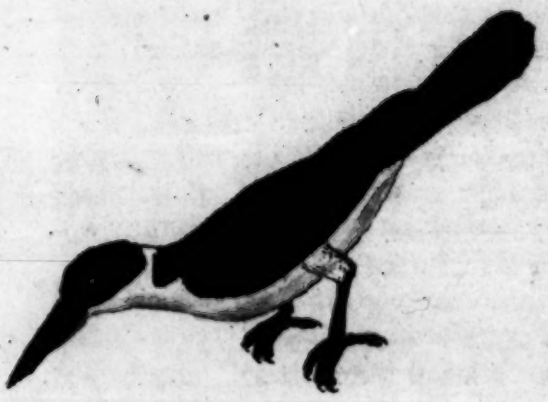
As this bird has been ſaid to build her neſt on the ſea, that ſhe might not be interrupted in this taſk; ſo ſhe has alſo been ſaid to poſſeſs a charm with which ſhe allayed the fury of the waves: and the poets, indulging the powers of imagination, have dreſſed the ſtory in all the glowing robes of romance; as may be ſeen in Theocritus among the Greeks, and Ovid and Virgil among the Latins.

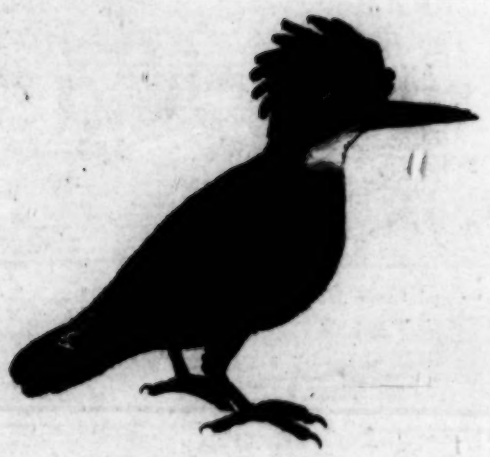
Both Ariſtotle and Pliny inform us, that the Halcyon is moſt common in the Sicilian ſeas; that it ſits only a few days in the depth of winter; and that, during this interval, the mariner may ſail in perfect ſecurity. Hence theſe were called Halcyon days; and, in after-times, the words were uſed to expreſs any ſeaſon of felicity.

Nor do the poets and naturaliſts of antiquity alone abound in fictions relative to this bird: the hiſtorians themſelves are not exempt from them. Cicero wrote a long poem in praiſe of the Halcyon, of which only two lines are extant. Even the Emperor Gordian wrote on the ſame ſubject; and the fables which the heathens recorded have been adopted by one of the primitive fathers of the Chriſtian church. 'Behold,' ſays St. Ambroſe, 'the little bird which, in the midſt of winter, lays her eggs on the ſand by the ſhore. From that moment the winds are huſhed; the ſea becomes ſmooth; and the calm continues for fourteen days. This is the time ſhe requires; ſeven days to hatch, and ſeven days to foſter her young. The Creator has taught theſe little animals to make their neſts in the midſt of the moſt ſtormy ſeaſon, only to manifeſt his kindneſs, by granting them a laſting calm. The ſeamen are not ignorant of this bleſſing; they call this interval of fair weather their Halcyon days; and they are particularly careful to ſeize the opportunity, as they have no interruption to dread.'

Numberleſs inſtances might be adduced of the credulity of mankind with reſpect to this bird. But the







1. BLACK AND WHITE KING-FISHER. 2. CRESTED KING-FISHER. 3. GREAT KING-FISHER OF GAMBIA. 4. KING-FISHER OF LUCON. 5. LITTLE GREEN AND ORANGE-COLOURED KING-FISHER. 6 SPOTTED KING-FISHER. 7. SURINAM KING-FISHER. 8. WHITE-COLLARED KING-FISHER.

Plate LXI. Published as the Act directs by Harrison & Co. Dec.r 24th 1784

the King-Fiſher, with which we are now acquainted, poſſeſſes none of thoſe powers of allaying the ſtorm, or of building on the waves: it is contented to build it's neſt on the banks of rivers, and in ſuch ſituations as are moſt unlikely to be affected by the riſe of the ſtream. When it has fixed on a proper ſpot, it digs with it's bill a hole about a yard deep: and ſometimes it occupies the deſerted hole of a rat, or one cauſed by the decay of the root of an old tree; enlarges it towards the bottom; lines it with the down of the willow; and, without any additional preparation, depoſits it's eggs.

In reality, the neſt of the King-Fiſher, in modern times, (and birds in a ſtate of nature never change their inſtincts) is very different from that deſcribed by the ancients, as ſhaped like a long-necked gourd, and compoſed of the bones of the ſea-needle. Plenty of bones and ſcales, indeed, are always found in it; but theſe are only the remains of the bird's food, and not brought there either for the purpoſes of warmth or convenience. The King-Fiſher, as Bellonius obſerves, feeds on fiſh, but cannot digeſt their bones or ſcales; and therefore throws them up again, as eagles and owls are obſerved to do a part of their prey.

In one of theſe deep and gloomy holes there are frequently found from five to nine eggs; and if the neſt be robbed, the bird returns, and lays in the ſame ſituation. 'I have had,' ſays Reaumur, 'one of theſe females brought me, taken from her neſt about three leagues from my houſe. After admiring the beauty of her colours, I permitted her to fly; when the fond creature was inſtantly ſeen to repair to the neſt where ſhe had juſt before been made a captive: there joining the male, ſhe again began to lay, though it was for the third time, and the ſeaſon was very far advanced. At each time ſhe had ſeven eggs. The older the neſt is, the greater quantity of fiſh-bones and ſcales does it contain: theſe are diſpoſed without any order, and ſometimes occupy a conſiderable ſhare of room.'

In our climate the King-Fiſher begins to lay early in the ſeaſon, and excludes her firſt brood about the beginning of April. The fidelity of the male exceeds that of the turtle: he brings the female large ſupplies of fiſh during the ſeaſon of incubation; and ſhe, contrary to moſt other birds, is always plump and fat at that time. The male, who on other occaſions always makes a twittering noiſe, now enters the neſt with all the ſilence and circumſpection imaginable. The young are hatched at the expiration of twenty days; but they do not acquire the beauty of their plumage till after the firſt molting ſeaſon.

The fleſh of the King-Fiſher is utterly unfit for food; but it's beautiful plumage preſerves it's luſtre longer than that of any other bird with which we are acquainted.

KING-FISHER, AMERICAN. This bird, as to it's general ſhape, reſembles the European King-Fiſher, as well in it's bill as feet; but it's tail is much longer in proportion. The bill is ſtrong and blackiſh, except towards the baſe, where it is of a reddiſh fleſh-colour. The head is of a lead-colour, inclining to blue; and on it's top there is a kind of creſt of long looſe feathers. On each ſide of the head there are two white ſpots; and the throat and under-ſide of the neck are white. The breaſt is lead-coloured. Six or ſeven of the prime quills are blackiſh, with ſmall white ſpots on the outer webs, which form collectively tranſverſe lines of white: the reſt of the quills have white tips; and the inner covert-feathers of the wings are white, with a ſmall admixture of orange. The tail is of a pale lead-colour, tipt and tranſverſely marked with narrow bars of white. The belly, the thighs, and the covert-feathers under the tail, are white; the legs and feet are of a reddiſh brown hue; and the claws are duſky.

KING-FISHER, LITTLE GREEN AND ORANGE-COLOURED. The length of this bird is about five inches and a half from the tip of the bill to the end of the tail. The bill is duſky, except that the lower chap is reddiſh towards the baſe. The throat is orange-coloured; and a mark of the ſame colour runs on each ſide from the baſe of the bill over the eyes. The head, the hinder part of the neck, the back, the tail, and the covert-feathers of the wings, are a fine green; a bar of the ſame colour croſſes the breaſt; but the ſides of the belly are of a bright reddiſh orange-colour. The lower part of the belly, the thighs, and the covert-feathers under the tail, are white; the tail is compoſed of twelve plumes, the two middle ones being ſomewhat longer than the reſt; and the inner webs are all ſpotted with white. The inner coverts and the ridges of the wings are a light orange; and the quills are duſky, ſpotted with a light clay-colour on the outer and inner webs, excepting a few of the outer quills. The legs and feet are ſmall; and the toes, which are fleſh-coloured, are connected like thoſe of the other King-Fiſher ſpecies.

KING-FISHER OF CATESBY. This bird is about the ſize of the thruſh, and the largeſt of all thoſe which have ſhort tails. The head is big in proportion; and thick of feathers, which form an irregular blue tuft. A white line appears under the eyes, and a ſpot of the ſame colour on the forehead. The breaſt is white, variegated with ſtreaks of red and blue; the quill-feathers of the wings are black, tipt with white; the lower part of the belly is white; the tail is blue; and there are three toes before, and one behind.

KING-FISHER, GREAT, OF GAMBIA. This ſpecies is as large as the greater thruſh. The bill is long and ſtraight, ending in a ſharp point, and of a bright ſcarlet colour; the upper mandible is channelled on each ſide; and the angles or corners of the mouth, which are deep cut, fall directly under the eyes. The head, the neck, the whole underſide, and part of the back, are covered with dirty orange-coloured feathers; the chin and breaſt are lighter than the back; the wings are purple in the upper part; the greater quills are blue, except ſome of the foremoſt, which are black; and the ridges of the wings are white. The lower part of the rump and back is a beautiful varying blue green, the wing-feathers bordering on the back partaking of the ſame colour; the tail is a fine blue with a greeniſh tinge; the legs and feet are red; and the claws are black.

KING-FISHER, BLACK AND WHITE. The bill of this bird is of a black colour, long, pretty thick at the baſe, and ends in a ſharp point. The crown of the head and the hinder part of the neck are black; a broad line paſſes from the angles of the mouth under the eyes, which blends with a ſimilar colour behind the neck; and from the noſtrils are drawn white lines above the eyes, and continued the whole length of the head. The whole underſide, from the bill to the tail, is of a dirty yellowiſh white colour, except a narrow bar of black ſpots that croſſes the middle of the breaſt. The whole back is black, tipt with grey; the ridge of the wing is white; the covert-feathers are partly black and partly white; the baſtard-wing is black; the tail-

feathers are white towards their bottoms, with a row of tranſverſe black ſpots; towards the tip there is a broad bar of black; and beyond it the tips are white. This bird was firſt deſcribed by Edwards; and, according to him, is a native of Perſia.

KING-FISHER, SURINAM. This ſpecies has a long, ſtraight, black bill, with channels in the upper mandible. The head is of a dirty brown colour, brighter towards the bill, and darker in the hinder part; under the bill there is a pretty large white ſpot of an irregular figure; the whole body is of a dirty black hue with a blueiſh gloſs; the wings are of a fine dark ſhining green colour, a ſingle white feather appearing among the coverts; the upper ſide of the tail is a dark gloſſy green, the under being duſky; the two centre feathers are of an enormous length; and the legs and feet are black. This bird, which is a native of Surinam, is diſtinguiſhed by Linnæus under the name of Alcedo Paradiſea.

KING-FISHER, SPOTTED. The bill of this bird is duſky; a broad line runs from the bill on each ſide of the head; and above and beneath the eyes there are narrow lines of orange. The throat, breaſt, belly, thighs, coverts beneath the tail, and inner coverts of the wings, are of a fine orange-colour; between the back and neck paſſes a broad liſt or collar of black feathers, edged with white; the crown of the head is black, but gradually becomes green on the hinder part of the neck; the ſides of the head are green; and the back, rump, upper ſides of the wings, and tail, are alſo of a fine gloſſy dark green hue, variegated with white ſpots. The quills within-ſide, and the under-ſide of the tail, are of a dark aſh-colour, with whitiſh ſpots on their webs; the tips of the quills without are duſky an inch deep; and the legs and feet are of a reddiſh fleſh-colour. This ſpecies is a native of Surinam.

KING-FISHER, CRESTED. The bill of this bird is of the common ſhape and colour; a line of orange paſſes under the eyes; the throat under the bill is white; and the crown of the head is covered with long blue green feathers, variegated with black lines, forming an elegant looſe creſt. The feathers immediately above the eyes are blue; the hinder part of the neck, the back, rump, wings, and tail, are of a beautiful ultramarine blue colour; the tips of the quills are duſky; the inner covert-feathers of the wings are orange-coloured; the under-ſide of the tail is duſky; the breaſt, belly, thighs, and covert-feathers under the tail, are a bright orange; and the legs and feet are red. This bird, which is a native of the Eaſt Indies, was firſt deſcribed by Edwards.

KING-FISHER OF BENGAL. This bird is ſomewhat ſmaller than the thruſh. The bill is about three inches long, of a fine ſcarlet colour, thick at the baſe, and ſharp at the end; the irides are a fine yellow; the head, the upper part of the neck, and the back, are brown; and the breaſt, throat, and part of the belly, are white, having five large brown ſpots on each wing. The lower part of the back, the wings, and the tail, are of a fine blueiſh green colour, except the coverts of the wings, which are brown; and the legs and toes are orange-coloured, and very ſhort.

KING-FISHER, SMALL, OF BENGAL. This ſpecies, which is about the ſize of the common King-Fiſher, has a fine ſcarlet bill, pretty thick at the baſe. On the forehead there is a yellow ſpot, and another under the throat. A broad black line runs from the bill quite round the eyes. The head is adorned with a tuft of a dull red colour; and beneath it there is a dark blue line, ſeparated from the back by a broad white ſtripe. The back and wings are a dark blue; the upper part of the tail is red; the belly, thighs, and lower part of the tail, are a beautiful yellow; and the legs and feet are reddiſh.

KING-FISHER OF LUÇON. This bird is about the ſize of the blackbird: the top of the head, and part of the neck, are brown; and this colour likewiſe encircles the eyes, but above them there is a ſhort white line extending to the bill. The leſſer coverts of the wings are of the ſame colour with the head and neck; the primaries are blue and black in their middles, tipt with the latter; the upper part, and the middle of the back, are browniſh; the rump and coverts of the tail are a bright ſky blue; and the tail itſelf is a deep blue. The fore-part of the neck, the breaſt, and the belly, are white, with a longitudinal brown mark in the middle of each feather; and between the neck and the back there is a collar of ſimilar colours. This ſpecies was firſt deſcribed by Sonnerat.

KING-FISHER, WHITE-COLLARED, PHILIPPINE. This curious ſpecies, originally deſcribed by Sonnerat in his Voyage to New Guinea, is ſomewhat leſs than the thruſh: the head, neck, wings, tail, and back, are blue ſhaded with green; the throat, breaſt, belly, and under-coverts of the tail, are white; and a circle of the ſame colour ſurrounds the neck. The feet, and the upper mandible, are of a pale black hue; and the lower mandible has a yellowiſh baſe.

KITE; the Falco Milvus of Linnæus. A well-known bird of the hawk kind, which may be diſtinguiſhed from all the reſt of this tribe by his forky tail, as well as by his ſlow floating motion, being almoſt perpetually on the wing. He appears to repoſe on the boſom of the air, without making the leaſt effort to ſupport himſelf. Pliny apprehends that the invention of the rudder originated from obſervations made of the various motions of the tail of the Kite when ſteering through the air: certain, however, it is, that the moſt uſeful arts were originally copied from animals, though mankind may have improved on them.

The Kite ſubſiſts principally on accidental carnage, as almoſt every bird is able to eſcape from him. He may therefore be conſidered as an inſidious thief, who only prowls about; and, when he perceives a ſmall bird wounded, or a young chicken that has ſtrayed too far from it's parent, inſtantly avails himſelf of the hour of calamity, and, like a famiſhed glutton, deſtroys the victim without mercy.

The Kite uſually breeds in large foreſts, or woody mountainous countries; and lays two, and ſometimes three, white eggs, marked with dirty yellow ſpots; which, like thoſe of other predaceous birds, are very round and blunt at their ſmaller ends.

Lord Bacon remarks, that when the Kite flies high, fine and dry weather may be expected. It has been reckoned a bird of paſſage by ſome authors; but it is now univerſally known to continue in England throughout the year. It's length is twenty-ſeven inches; the expanſion of it's wings is about five feet; and it's weight is forty-four ounces. The bill is two inches long, and very much hooked at the extremity; the ſkin at the baſe of the bill is yellow; the head and chin are of a light grey colour, though ſometimes white marked with oblong ſtreaks of black; the neck

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and breaſt are of a tawny red hue, but the middles of the feathers are black. The ſpots are leſs numerous on the belly and thighs, and under the tail they almoſt diſappear. The back is brown; the firſt five quill-feathers are black; and on the inner webs of the remainder there are large blotches of white. The coverts of the wings are varied with tawny black and white; and the tail is of a tawny red hue, the outer feathers on each ſide being darker than the reſt. The thighs are covered with very long feathers; and the legs are yellow and ſtrong. However, theſe birds differ in their colours, ſome having been obſerved entirely of a tawny hue.

The Kite is ſaid to be of eſſential ſervice in medicine. It's aſhes, taken inwardly, are eſteemed effectual in the gout and epilepſy: the ſame is ſaid of the head and liver, when burnt; and the latter is alſo an ingredient in ophthalmic medicines. The blood, mixed with nettles, and applied, is ſaid to give relief in the gout; the gall enters the compoſition of collyria for the eyes; and the fat is uſed in anointing podagrical patients.

KITE, BRAZILIAN. This ſpecies, which is alſo called Caracara, and by the Portugueſe Gavion, is about the ſize of the common Kite: it's tail is nine inches long; it's head reſembles that of the hawk; it's bill is black and hooked; it's plumage is tawny, with white and yellow ſpecks; and it's feet are yellow, with ſemicircular, long, ſharp, black talons.

KITTIWAKE; the Larus Riſſa of Linnæus. A bird of the gull kind, which inhabits the romantic cliffs of Flamborough Head, the Baſs Iſle, Prieſtholm Iſle, the rocks near Slains in Aberdeenſhire, and Northfield in the county of Bamff. The head, neck, belly, and tail, are of a ſnowy whiteneſs; behind each ear a duſky ſpot ſometimes appears; the back and wings are grey; the bill is yellow tinged with green; and the legs, which are duſky, are furniſhed with a ſmall knob inſtead of the hind toe.

KLIP-FISH. A name ſuppoſed by ſome authors to mean the lupus piſcis, or wolf-fiſh; and, by others, the common cod-fiſh. Fabricius is of the former opinion, and Schonefeldt of the latter.

KLIP-FISH is alſo a name by which the Dutch in the Eaſt Indies call a flat fiſh frequently caught on the ſhores, ſomewhat reſembling the bream. It is generally about ſix or ſeven inches in length, and of a very white and ſilvery hue: the nerves of the dorſal fin are prickly, as in the perch; the tail is pointed; and the irides are of a beautiful yellow colour. The fleſh is extremely admired for it's delicacy and flavour.

KNOT; the Tringa Canutus of Linnæus. An Engliſh bird of the ſnipe kind, ſaid to have obtained it's name from Canute, one of the Daniſh kings of this iſland, who is reported to have been extremely fond of it's fleſh.

This bird is ſeldom more than four ounces and a half in weight; the head and back are of a greyiſh brown colour; the rump is variegated with black and grey; the breaſt and belly are white; and the ſides are browniſh. In ſome varieties, a white ſtreak runs on each ſide of the head from the angle of the beak to the eyes. The long feathers of the wings are black and white; the tail, which is about two inches long, is tipped with white; the beak is black, and nearly an inch long; the eyes are large; and the legs are green.

Theſe birds are taken in great numbers, on the coaſts of Lincolnſhire, with a particular kind of net, which will ſometimes encloſe fourteen dozen at once. Their ſeaſon is from the beginning of Auguſt to that of November. They always diſappear at the commencement of the firſt froſty weather.

KOB. An appellation given by Buffon to his ſixth variety of the garelle tribe.

KOBA. A name given by Buffon to his fifth variety of the garelle tribe.

KOHLMULEN. An appellation given by ſome naturaliſts to the aſellus flaveſcens, or yellow cod; called alſo the blank and gelbe.

KOKOB. A Weſt Indian ſpecies of ſerpent, the bite of which is extremely fatal. It is of a brown colour, variegated with green and red ſpots; and is ſomewhat leſs than the common viper.

KOMMANICK. A German appellation for the large-creſted lark, common in many parts of that country, but wholly unknown in the Britiſh iſles. It is about the ſize of the common lark, but it's beak is much thicker and longer: the back has more grey, and fewer ſpots, than the common lark; the rump is almoſt of one uniform grey colour; and the creſt is compoſed of ten or twelve dark-coloured plumes, which the bird can raiſe, depreſs, or expand, at pleaſure. This ſongſter ſeldom ſoars very high in the air; and generally frequents the banks of rivers.

KORACHERYNCHUS INDICUS. An oriental fiſh, called by the Dutch Raevenbeck. It receives it's name from the ſimilarity of it's ſnout to the beak of the crow. It ſeldom exceeds ſeven inches in length: it's back and tail are red; it's belly is yellow; and it has alſo on each ſide two pale yellow lines, which run from the gills to the tail. The fleſh is wholeſome and well-taſted.

KORETTE, SEA. An Eaſt Indian fiſh, about ſix or ſeven inches in length, with large yellow eyes, and a bifid yellowiſh tail. The fins are yellow; the belly inclines to green; and under it and the tail there are ſeveral fins. The fleſh is eſteemed delicate and nutritive.

KRAKEN. A marine animal of the moſt enormous dimenſions; the credit of whoſe exiſtence depends on the evidence of Pontoppidon, biſhop of Bergen, in his Natural Hiſtory of Norway: and though it would be ungenerous to deny it's reality, the relation certainly ſtands in need of farther confirmation.

As no perſon has ever pretended to have ſeen a full-grown Kraken in all it's dimenſions, a particular account of it's conformation cannot be expected: nevertheleſs, we ſhall adduce the arguments of our author, on which he grounds his own belief of the exiſtence of this monſtrous production of nature; and leave every one to judge for himſelf of their probability and authenticity.

'Our fiſhermen,' ſays Pontoppidon, 'unanimouſly and invariably affirm, that when they are ſeveral miles from the land, particularly in hot ſummer weather, and by their diſtance, and the bearings of ſome points of land, expect from eighty to an hundred fathoms in depth, and do not find more than twenty or thirty; and more eſpecially, if they diſcover an unuſual quantity of cod and ling, they judge that the Kraken is at the bottom: but if they find by their lines that the water in the ſame place ſtill ſhallows on them, they know that it is riſing to the ſurface, and row off with the greateſt expedition till they come into the uſual ſoundings of the place; there lying a few minutes on their oars, they ſee the monſter emerge, and diſ-

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play itſelf ſufficiently, though it's whole body is not apparent. It's back, or upper ſurface, which ſeems an Engliſh mile and a half in circumference, (ſome have affirmed more) looks at firſt like a number of ſmall iſlands, ſurrounded with ſomething that floats like ſea-weeds; at laſt ſeveral bright points or antennæ appear, which grow thicker the higher they emerge, and ſometimes ſtand as high and large as the maſts of middle-ſized veſſels. In a ſhort time, it gradually ſinks, which is thought as dangerous as it's riſing, cauſing ſuch a ſwell and vortex, that it draws in veſſels, like that of Maleſtram.'

The biſhop laments the omiſſion of the only opportunity which ever has been, or perhaps ever may be preſented, of examining this creature when alive, or ſeeing it entire when dead: this, he acquaints us, did once occur, on the credit of the miniſter of Nordland, and vicar of the College for promoting Chriſtian knowledge; who informed him, that a Kraken came into the ſhallows between the rocks and cliffs near Abſtahong; where, in turning about, ſome of it's long horns caught hold of the adjoining trees, which it might have eaſily torn up, had it not been entangled in ſome clefts of the rock, whence it could not extricate itſelf, but putrified on the ſpot.

Pontoppidon mentions no account he has ever received of this monſter proving fatal to any perſon; but relates a report of the danger of two fiſhermen, who arrived at a part of the water covered with a quantity of the creature's thick ſlimy excrements: they immediately ſtrove to row off, but were not quick enough in turning to ſave the boat from one of the Kraken's horns, which ſo cruſhed it's prow, that it was with difficulty they ſaved their lives on the wreck, though the weather was perfectly calm. The excrements of this animal are ſaid to be attractive of other fiſh, on which it feeds. This expedient was probably neceſſary to it's ſubſiſtence, on account of it's ſlow unwieldy motion; as this ſlow motion again may be neceſſary to the ſecurity of a ſhip, which would certainly be overwhelmed on encountering ſuch an immenſe animal, if it's velocity was equal to it's weight.

In confirmation of the reality of this monſter, our learned author cites the deſcription of Faroe by Debes, for the exiſtence of certain iſlands, which ſuddenly appear, and as ſuddenly vaniſh. Many ſea-faring people, he adds, give accounts of ſuch, particularly in the North Seas; which their ſuperſtition has either aſcribed to the deluſion of the devil, or conſidered as inhabited by evil ſpirits. However, Pontoppidon ſuppoſes ſuch miſtaken iſlands to be nothing elſe but the Kraken; in which opinion he is greatly confirmed by the ſubſequent quotation from Dr. Hierne, a learned Swede, and which is certainly a very remarkable paſſage. 'Among the rocks about Stockholm,' ſays he, 'there is ſometimes ſeen a tract of land, which at other times diſappears, and is ſeen again in another place. Buræus has placed it as an iſland in his map. The peaſants, who call it gummar's ore, ſay, that it is not always viſible, and that it lies out in the open ſea, but it never fell under my inſpection. One Sunday, when I was out among the rocks, ſounding the coaſts, it happened that, in one place, I ſaw ſomething like three points of land in the ſea, which ſurprized me a little, as I thought I had inadvertently paſſed them over before. On this I called to a peaſant to enquire for gummar's ore; but when he came, we could ſee nothing of it: on which the peaſant ſaid all was well, and that this prognoſticated a ſtorm, or a quantity of fiſh.' To this our author ſubjoins, 'Who cannot diſcover that this gummar's ore, with it's points, and prognoſtications of fiſhes, was the Kraken, miſtaken for an iſland by Buræus!'

The biſhop takes the Kraken, probably from it's numerous tentacula, which ſerve it as feet, to be of the polype kind; and the contemplation of it's enormous bulk led him to apply ſome paſſages in the ſacred writings as deſcriptive of it.

After paying a juſt tribute of reſpect to the moral character and philoſophical abilities of our author, we muſt admit the poſſibility of this creature's exiſtence, as it implies no contradiction; though it ſeems to oppoſe a general prepoſſeſſion of the whale's being the largeſt animal in nature. But, were we to ſuppoſe a ſalmon or a ſturgeon the largeſt fiſh any number of perſons had ever ſeen or heard of, and that the whale had diſcovered himſelf as ſeldom, and but in part, like the Kraken; then it will be eaſily conceived, that the exiſtence of the whale had been as unwillingly credited as that of the Kraken is now. Some, indeed, may ſuppoſe, that ſuch an extenſive monſter would encroach on the ſymmetry of nature, and be over proportionate to the ſize of the globe itſelf; as a little retroſpection will inform us, that the breadth of what is ſeen of it, ſuppoſing it nearly round, muſt be full two thouſand ſix hundred feet; and it's thickneſs, which may be called it's altitude, at leaſt three hundred. Nevertheleſs, we apprehend that theſe immenſe dimenſions will not argue concluſively againſt the exiſtence of the animal, though conſiderably againſt a numerous increaſe or propagation of it. In fact, the great ſcarcity of the Kraken, it's confinement to the North Sea, and perhaps to ſimilar latitudes in the ſouth; the ſmall number propagated by the whale, which is viviparous; and by the largeſt land-animals, of which the elephant is ſaid to go two years with young; all incline us to conclude, from the analogy of nature, that this monſter is by no means numerous.

KUTZE GEHEF. A very beautiful mew, (ſo called by Marten) which receives it's name from it's cry. The bill is ſomewhat bent; and on it's under part there is a ſmall protuberance, or knob. The eyes are black, each being ſurrounded with a red circle; the tail is long and expanded like a fan; the legs are black and ſhort; the belly is of a ſnowy whiteneſs; and the wings and back are grey, except that the tips of the former are black.

This bird, which is about the ſize of the common mew, is caught with a hook baited with whale-fat, of which kind of food it is very fond. It is hunted by the arctic gull, that never deſiſts purſuing it till it drops it's excrements, which that bird devours. It is generally extremely lean; and even the little fleſh it contains is wholly confined to it's legs and breaſt.

END OF THE FIRST VOLUME.